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CHICAGO CIRCLE BULLETIN

UNDERGRADUATE STUDY 1976-77

UNIVERSITY OF ILLINOIS AT CHICAGO CIRCLE

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Undergraduate Study

1976-77

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This publication is a record of the 1975-76 academic year and an announcement of the 1976-77 academic year.

CHICAGO CIRCLE BULLETIN

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Academic Calendar

Chicago Circle

1976-77

Fall Quarter

September 14-16, Tu-Th	Registration
September 20, M	Instruction begins
October 1, F	Last day to add a course
October 11, M	Columbus Day (no classes)
October 29, F	Last day to drop a course
November 24, W	Instruction ends
November 25-26, Th-F	Thanksgiving (vacation)
November 29-December 3, M-F	Examinations

Winter Quarter

December 14-15, Tu-W	Registration
January 3, M	Instruction begins
January 14, F	Last day to add a course
February 11, F	Last day to drop a course
February 21, M	Presidents Day (no classes)
March 11, F	Instruction ends
March 14-18, M-F	Examinations

Spring Quarter

March 22-23, Tu-W	Registration
March 28, M	Instruction begins
April 8, F	Good Friday (no classes)
April 11, M	Last day to add a course
May 6, F	Last day to drop a course
May 30, M	Memorial Day (no classes)
June 3, F	Instruction ends
June 6-10, M-F	Examinations
June 12, Su	Commencement

Summer Session

June 14-15, Tu-W	Registration
June 20, M	Instruction begins
July 1, F	Last day to add a course
July 4, M	Independence Day (no classes)
July 22, F	Last day to drop a course
August 10, W	Instruction ends
August 11-12, Th-F	Examinations

1977-78

Fall Quarter

September 12, 14-15, M, W-Th	Registration
September 19, M	Instruction begins
September 30, F	Last day to add a course
October 28, F	Last day to drop a course
November 23, W	Instruction ends
November 24-25, Th-F	Thanksgiving (vacation)
November 28-December 2, M-F	Examinations

Winter Quarter

December 13-14, Tu-W	Registration
January 2, M	Instruction begins
January 13, F	Last day to add a course
February 10, F	Last day to drop a course
February 20, M	Presidents Day (no classes)
March 10, F	Instruction ends
March 13-17, M-F	Examinations

Spring Quarter

March 21-22, Tu-W	Registration
March 27, M	Instruction begins
April 7, F	Last day to add a course
May 5, F	Last day to drop a course
May 29, M	Memorial Day (no classes)
June 2, F	Instruction ends
June 5-9, M-F	Examinations
June 11, Su	Commencement

Summer Session

June 13-14, Tu-W	Registration
June 19, M	Instruction begins
June 30, F	Last day to add a course
July 4, Tu	Independence Day (no classes)
July 21, F	Last day to drop a course
August 9, W	Instruction ends
August 10-11, Th-F	Examinations

Calendars of the Urbana-Champaign and Medical Center campuses may be obtained from those campuses.

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Perspective

The University of Illinois at Chicago Circle is into its second decade. As a new campus in 1965, UICC superseded the Chicago Undergraduate Division of the University of Illinois at Navy Pier, whose two-year nondegree programs had operated since 1946. When classes began, enrollment was about 5,000 undergraduate students. UICC is now a commuter university offering about 75 undergraduate degrees and graduate degrees in 31 disciplines, with wide-ranging research and public service programs. Approximately 20,500 students are now enrolled, 2,000 of them in graduate studies.

UICC enrolls students in at the following colleges and school:
College of Architecture and Art
College of Business Administration
College of Education
College of Engineering
Graduate College
College of Health, Physical Education, and Recreation
College of Liberal Arts and Sciences
College of Urban Sciences
Jane Addams School of Social Work

UICC is one of three campuses of the University of Illinois. The others are the University of Illinois at Urbana-Champaign and the University of Illinois at the Medical Center. The University of Illinois at Chicago Circle is a comprehensive public university within a land-grant university tradition of combining research, teaching, and public service. UICC has been given a special responsibility to emphasize the fundamental disciplines, professional education, and applied research that are related to the major problems of urban society. Academic programs, research centers, and public service programs have this common focus.

UICC has, therefore, developed curricula and programs responsive to the needs of its urban environment. Among them are undergraduate programs in Black, Latin American, Native American, and Slavic studies; interdisciplinary graduate programs in urban planning at the College of Urban Sciences; service programs like the Educational Assistance Program; and research centers such as the Center for Research in Criminal Justice. UICC

students may take courses in cooperative programs with other campuses of the University and with other institutions in the Chicago area.

Chicago Circle offers a number of services to meet the special needs of a diverse student body. Students have access to counselling, financial aid, tutoring, academic advising, aid in improving study skills, and other assistance. Special opportunity programs include honors programs, foreign study, special programs for high school seniors, and extension courses on and off campus.

UICC's physical environment has been designed deliberately to emphasize the urban setting in which this commuter institution functions. Its campus of 26 distinctively contemporary buildings is an architectural complex with its own identity but clearly a part of the city it serves. Students' choices of social, cultural, professional and recreational activities are enhanced by the resources of the large metropolitan community.

Most UICC students live at home and work at least part time. The location of the school close to Chicago's business district at the intersection of major highways makes it easily accessible to students commuting from residential neighborhoods or from business locations. Public transportation to the campus includes CTA subway (Congress and Douglas Park trains) and buses on Halsted, Harrison, and Taylor streets and Roosevelt Road. The campus is bounded by the Eisenhower and Ryan expressways, Racine Avenue, and Roosevelt Road.

Library

William B. Ernst, Jr., MA, University Librarian
Giles B. Robertson, MALS, Head, Public Services Division
Louis A. Schultheiss, MA, Head, Technical Services Division

Professors: William B. Ernst, Jr., MA; Marie A. Rapp, BALS (Emeritus); Giles B. Robertson, MALS; Louis A. Schultheiss, MA.

Associate Professors: Robert J. Adelsperger, MS; Aivars Aistars, MA; Harriet K. Barlow, MS; Aline M. Fairbanks, MS; Beth A. Hamilton, MALS (Adjunct); Mary Lynn McCree, MA; Yuri I. Nakata, MA; Cynthia A. Steinke, MS.

Assistant Professors: Richard P. Arsenty, MS; Mary Ann Bamberger, MA; Marjorie C. Bengtson, MS; Ronald K. Fark, MS; Barbara J. Ford MS; Harry L. Frudd, MALS; Vida M. Girnius, MALS; Elaine A. Huarisa, MALS; Barbara J. Hycnar, MALS; Dorothy W. Ivy, MLS; Michael Jankowski, MS; Martha Kester, MS; Frank J. Locker, MA; Robert F. Moran, MSLS; Gladys C. Odegaard, MALS; Mary L. Ritzenthaler, MS; Marsha Selmer, MSL; Pamela Sieving, MSLS; Virginia R. Stewart, MA; Raminta Sinkus, MA; William D. Thrasher, MALS; Carol Tobin, MA.

Instructors: Vukosava Mandic, MA; Erlinda Paguio, MA; Alan J. Schrader, MM.

Libraries

The library of the University of Illinois at Chicago Circle, consisting of the Main Library and the Math and Science Libraries, affords resources for students in all curricular areas and provides constantly growing collections of materials for current and projected graduate programs and for faculty research.

The library building seats 2,800 people. Library holdings as of July 1975 included more than 571,700 books and bound periodicals, 233,850 government documents, 87,400 maps, and an extensive and expanding collection of microform materials. Currently, the library receives 7,620 periodical titles. Students have full access to books and other materials shelved on open stacks. Leaflets describing services, rules, and regulations within each department are available throughout the library.

Main Library

All books, journals, and periodicals except those in the fields of astronomy, biology, chemistry, geology, mathematics, and physics are housed in the Main Library. The building also houses the Administrative Offices, Technical Services, and the Public Services Division. The latter division includes the Audio Center, the Circulation Desk, the Curriculum Library, the Documents Department, the Interlibrary Loan Office, the Periodical and Microforms Desk, the Reference Desk, the Reserve Desk, and the Special Collections Department. Schedules of hours are posted in the first and second floor lobbies.

The reference collection includes encyclopedias, handbooks, indexes, bibliographies, and specialized reference tools. Reference librarians are available at the Reference Desk 8-5, Monday-Friday, 10-6, Saturday, and 1-6, Sunday, to assist faculty and students. The microforms collection contains more than 337,350 items of microforms and reading and duplicating equipment. Assistance in the use and borrowing of microforms and periodicals is available at the Microforms-Periodicals Desk. Required readings for classroom assignments can be found at the Reserve Desk. The Documents Department houses United States, United Nations, and Illinois state and municipal documents and provides reference service for these materials.

The Special Collections Department administers Chicago Circle's collections of rare books, maps, archives, and manuscripts. Since all items are not listed in the main card catalog, each section of the department should be consulted for its holdings. The Map Section is a government depository for US Geological Survey and US Army maps.

Math Library

Located on the fourth floor of Science and Engineering Offices, the Math Library houses mathematics monographs in the QA classification and selected periodicals relating to mathematics as well as reserve materials for mathematics courses.

Science Library

Located on the third floor of Science and Engineering South, the Science Library houses monographs and periodicals in astronomy, biology, chemistry, geology, and physics and related reference materials. Also available are abstracts and indexes covering the pure sciences, selected government documents, and reserve materials for 200- and higher-level courses. Circulation policies and procedures, hours, and special services are outlined in printouts available in the Science Library.

Computer Center

The UICC Computer Center has an IBM 370/158 computer. The circuitry of this computer utilizes the most advanced technology currently available and the IBM 370/158 at the Computer Center was one of the first in the nation to be installed at a university computing center. The computer supports both batch processing and a network of remote terminals in a multiprogramming time-sharing environment utilizing advanced software for main frame memory allocation and page swapping.

The system makes available to users most major programming languages and a large program library of applications packages, all of which can be reached from remote terminals. Also available from terminals are truly interactive PL1 and BASIC programming systems with advanced editing and debugging features that allow the user to interact with the program during its execution as well as during its compilation.

Of particular interest is the possibility of preparing material at the terminals that is then available for use by students at any school where standard teletype or teletype-compatible CRT terminals are available. A body of such material has been prepared at Chicago Circle and is currently available. Material prepared elsewhere can often be easily adapted for use here.

Facilities exist for both CRT and hard copy graphical applications.

The center also operates an IBM 1800 process control computer with 32,768 words of 2 microsecond core storage.

The staff of the Computer Center teaches courses in programming, software design, theory of computation, and numerical analysis in cooperation with the Department of Mathematics and the College of Engineering. The staff also assists other departments in utilizing the equipment for both instruction and research.

Office of Instructional Resources Development (OIRD)

This office provides comprehensive and coordinated support for all campus instructional activities. Two consultative divisions, Course Development and Instructional Design, work with faculty on instructional development projects. Six operating divisions, Campus Audiovisual Services, Film and Video Availability Center, Instructional Materials Production, Media Production Center, Technical and Engineering Services Division, and the PLATO Computer Project, provide services and production facilities. The office also provides media support for administrative functions, community organizations, campus groups, professional meetings, and student activities.

Instructional Design helps to locate and try out available materials applicable to courses at Chicago Circle and aids in the development of instructional materials that faculty and support staff produce.

Course Development analyzes instructional tasks and assists the faculty in stating objectives, designing measuring instruments, planning instructional sequences, and validating instructional effectiveness.

Campus Audiovisual Services makes audiovisual equipment available to faculty and staff for classroom and other University functions. The Film and Video Availability Center arranges rental of commercial films, videotapes, and filmstrips and maintains the OIRD film and tape collection. In its graphic arts studio and photographic laboratory, the Instructional Materials Production Division produces artwork, visual aids, and camera-ready materials for publication. The Media Production Center combines all film and television production activities. Films and videotapes are made for use in classroom instruction. These productions include campus events, interviews and research on innovative uses of film and videotape. Technical and Engineering Services supports the work of all OIRD divisions, designs systems to meet departmental program requirements, and maintains the OIRD closed-circuit television system.

The PLATO Computer Project provides faculty and students access to PLATO terminals for both developmental and instructional activities.

Student Handbook and UICC Student

The Student Handbook, given to each incoming student, provides information about the University, its customs, and its policies. Enrolled students may obtain copies from the Office of Student Affairs.

UICC Student is the official student newsletter of this campus. It is published several times during a term and is distributed in bins throughout the campus. Back issues are available in 809 University Hall.

All students are responsible for the information in the Student Handbook and all announcements in UICC Student.

Research Centers

Center for Research in Criminal Justice

The center is a research unit associated with the Department of Criminal Justice in the College of Liberal Arts and Sciences. It consists of a small core staff that conducts, supports, and supervises criminological research activities. All research is organized on a project basis, i.e., projects are organized, do their work during a specified period, and are then phased out of existence. The center's orientation is empirical and relies on both quantitative and qualitative methods. For the most part, the center engages in two kinds of research: (1) experimental-evaluational-performance research designed to test hypotheses with data and (2) process-descriptive-historical research designed to determine the structure and functions of crime-related organizations and activities.

Energy Resources Center

Established in September 1973 to study and offer advice on the overall energy problem in the state of Illinois, the Energy Resources Center is an all-campus unit administered by the Office of the Vice Chancellor for Academic Affairs. The staff of the center is augmented by members of the Departments of Energy Engineering, Information Engineering, Architecture, and Political Science; the Urban Systems Laboratory; and other units of the University.

The immediate goal of the center is to determine the magnitude of the flow of natural resources, coal, oil, gas, and uranium into the state in general and into Chicago in particular to establish the use pattern of energy resources in transportation, industry, residential-commercial buildings, and other applications. The center identifies critical research and development needs of the Illinois energy resource program and undertakes active research in selected areas.

The center coordinates the various energy-related educational programs and courses of the entire campus, explores the technical manpower needs in the energy field in Illinois and the surrounding states, and formulates recommendations for new programs to meet future needs.

Urban Systems Laboratory

The Urban Systems Laboratory is a multidisciplinary research organization located in the College of Engineering. Its mission is to bring together appropriate faculty to respond to research requests and to generate research programs responsive to major issues in urban systems. In this sense, the laboratory is a device for providing a focal point for research involving technological, social, and economic components for the analysis and solution of urban system problems.

The laboratory is primarily an applied research and problem-solving unit. Its basic areas of emphasis are the infrastructure urban systems including transportation, communication, shelter, environment, service delivery, and physical resources systems. It concentrates on the development and application of methods of analysis to these systems as well as the development and evaluation of alternative methods of improving the performance, utility, efficiency, economy, and responsiveness of these systems.

Commuter Services

Lockers

Any student or faculty member may claim, and attach a lock to, any unoccupied locker (available in most classroom buildings) during the academic year. Contents and lock must be removed when the occupant leaves the University, or not later than the end of the summer term. The University is not responsible for contents, theft, or loss. For assistance or information, call 996-5058.

Parking

Parking facilities for students, faculty, staff, and guests of the University are of two types: key card lots with a fee for the term and daily fee lots that charge $1 per entry.

Parking fees are subject to periodic review and change. Consult the University Parking Office at 996-5053 or 704 Chicago Circle Center for further information.

Circle Children's Center

A full-time day care facility is available to the children of University of Illinois students, faculty, and staff. Children must be between the ages of 3 and 6 and toilet trained. Rates are on a sliding scale, based on family income. Call 996-8664 or 8663 for additional information and application forms.

Housing

The University of Illinois at Chicago Circle was established to serve the needs of students who can travel daily to and from the campus. It is assumed that most students will be living at home with their families or, if minors, in accommodations of which their parents would approve. There are facilities in the Chicago area that offer activities and supervision similar to those of a residence hall, for example, the Eleanor Clubs (for women) and the YMCA. Whether students live in these facilities or in others is a matter of personal responsibility and/or of agreement between students and their parents.

The Auxiliary Services office assists faculty, staff, and students in finding housing by maintaining a file of available rooms and apartments for rent and houses for rent or sale. This listing service is available 8:30-4:45, Monday-Friday, in 704 Chicago Circle Center, 996-5055. Landlords are responsible only for a pledge of nondiscrimination on the grounds of race, religion, or national origin. A listing is removed when there is evidence that the pledge has been violated. However, the University does not inspect the premises or verify the accuracy of the statements made by the owners at the time of the referral.

Housing listings, as well as Roommates Wanted, Want-A-Ride, and Want-A-Rider notices, are posted by Auxiliary Services on the bulletin board of the first floor near the main entrance of Chicago Circle Center.

Persons seeking a roommate, with or without an apartment, are urged to advertise on this bulletin board. Forms for this purpose, including a nondiscrimination pledge that must be signed by the landlord, may be obtained in Room 704 and must be completed before the notice may be posted by Auxiliary Services.

Communicator

Announcements of events, holiday closing schedules, emergency bulletins, and information important to students and the University community, are available by dialing 996-5500 on a 24-hour basis. To place an announcement, call Auxiliary Services, 996-5055.

Admission, Registration, and Records

As a state-supported, comprehensive university, the University of Illinois seeks to provide a higher education for those who will profit from an intellectually challenging program. The admission requirements are designed to identify those who possess the scholastic ability and the maturity needed to succeed in and to benefit from such a program. The University of Illinois is in full compliance with all federal and state nondiscrimination and equal opportunity laws, orders, and regulations, and will not discriminate against any person because of race, color, sex, religion, or national origin in any of its educational programs and activities. For additional information on the equal opportunity and affirmative action policies of the Chicago Circle campus, please consult the Office of Nan McGehee, Associate Chancellor, 2801 University Hall, Ext. 4878.

A qualified applicant seeking admission as a degree candidate may enter any college or school of the University of Illinois at Chicago Circle (with the exception of the Departments of Architecture and of Art in the College of Architecture and Art and the Jane Addams School of Social Work) at the beginning of the fall, winter, spring, or summer terms. Beginning-freshman applicants for the Department of Architecture are admitted only at the beginning of the fall term and for the Department of Art at the beginning of the fall and spring terms. Applicants to the Jane Addams School of Social Work are admitted only at the beginning of the fall term. Students whose first registration is in the summer term are eligible to continue in the fall term only if they applied to one of the academic colleges, rather than to the summer-session-only, and met full admission requirements. Otherwise, they must apply separately for fall term and meet full admission requirements. See *Admission to the Summer Term Only.*

Dual Enrollment. Under certain circumstances, students at Chicago Circle may enroll for a limited number of hours in courses offered at the city colleges of Chicago, providing they have received permission from their college deans. Conversely, city college students may enroll at Chicago Circle.

Students registered at Chicago Circle should request the necessary forms at the Office of Admissions and Records; students registered at the city colleges should inquire at the registrar's office of their college.

Students enrolled for the fall term at a semester-system institution may apply for admission to the winter term at Chicago Circle if they are carrying no more than 6 semester hours; unless they wish to return to the city college campus for the spring semester, they need not apply for dual enrollment.

Admission Requirements and Procedures

High School Seniors who wish to enter the fall term immediately following their graduation from high school are encouraged to submit their applications for admission at the earliest possible date in the senior year. By so doing, the prospective Chicago Circle freshman has an opportunity to participate in advance enrollment procedures during the spring and summer months prior to fall enrollment. When ample space is available, action is taken on individual applications in the order in which they are completed. A completed beginning-freshman application is one for which a high school transcript and official test scores are on file in the Office of Admissions and Records. If it is necessary to limit admission approvals for any given term, admission priority is given to those students who demonstrate high scholastic ability. A combination of test score and rank in class forms the selection index for beginning freshmen.

Transfer-Student, Readmission, Irregular, and Unclassified Applicants whose applications and all supporting credentials are on file well in advance of the term for which admission is sought benefit by receiving earlier notification of admissibility. If it becomes necessary to limit admission to any college or curriculum at either the lower division (under 90 quarter or 60 semester hours) or upper division (90-and-above quarter hours or 60-and-above semester hours), admission priority is granted in the order of scholastic excellence. For new transfer students and former University of Illinois students seeking readmission, the cumulative average for all previous collegiate work is the selection index.

Pre-application Advising. Admissions and Records maintains a pre-application advising service that is available to all prospective students. An appointment is not required, and inquiries are welcome during the normal working day, Monday through Friday. The specific steps to be completed by the applicant for one of the categories listed below are supplied as requested. Admissions representatives also visit high schools and junior colleges in the Chicago area to explain fully the admission requirements, procedures, and other information relative to Chicago Circle. They also, on request, arrange for high school students and counselors to come to the campus for group discussions and tours.

Application forms may be obtained by mail, by telephone (312-996-4388), or in person from the Office of Admissions and Records, University of Illinois at Chicago Circle, Box 4348, Chicago, Illinois 60680. The office is located in the south wing of the Library.

Application Fee. All applicants for admission or readmission pay a nonrefundable application fee of $20, to be enclosed with the application sent in the official envelope provided with the application form.

The application fee may be waived for:

1. Members of the University faculty and staff
2. Staff members of allied agencies
3. Extramural nondegree applicants
4. Applicants who, because of extreme financial hardship, cannot meet the cost of the fee
5. Applicants under approved foreign exchange programs in which the University participates, such as LASPAU and ASPAU, and foreign students participating in approved exchange programs where the waiver of fees is reciprocal
6. Intercampus transfers at the same level: undergraduate to undergraduate or graduate to graduate
7. Applicants denied admission to one campus who wish to apply for admission on the same level at another campus for the same term
8. Students from other universities participating in the CIC program by taking courses at the University of Illinois
9. Graduate and professional applicants whose entry is advanced or delayed by action of their major departments
10. University of Illinois students applying for work on a second campus as concurrent registrants, and non-University of Illinois students applying as concurrent registrants from another institution with which the University has a reciprocal agreement
11. Cooperating teachers and administrators who receive assignment of student teachers
12. Students on "leave of absence" status who are re-entering.

A *Beginning-Freshman Applicant* at Chicago Circle must meet the following requirements:

1. Be at least 16 years of age. A 15-year-old applicant who meets all other admission requirements may petition for admission.
2. Be a graduate of an accredited high school or submit satisfactory scores on the General Educational Development test (GED).
3. Complete the American College Test (ACT) or the College Board Scholastic Aptitude Test (SAT).
4. Present a satisfactory combination of class rank and test scores.
5. Present 16 units of credit, including 3 in English. Only courses in the history and appreciation of literature, composition (including oral composition when given as a part of a basic English course), and grammar count toward the 3 units required for admission to all curricula.

A unit represents one academic year of high school work that consists of 120 sixty-minute periods in the classroom. Two hours of work requiring little or no preparation outside the classroom are considered as having the same value as one hour of prepared classroom work. Fractional credits of less than ½ unit are not accepted.

Credit for work completed prior to the ninth grade is accepted by the University if it appears on the transcript of an accredited high school and is certified by the principal to be for a course equivalent in quality and quantity to the course ordinarily offered in that high school. Such credit usually applies to elementary algebra and foreign languages; however, it might apply to any subject.

Beginning-Freshman Application Procedures. High school seniors who wish to enter a fall term are encouraged to submit their applications for ad-

mission as early as possible after October 15 of their senior year. The completed application and check or money order for $20 made out to the University of Illinois should be submitted to the high school principal with the request that they be mailed in the appropriate envelope *together with* an official transcript of the high school, which should include:

For the student in the seventh semester (first semester of the senior year): grades for the first three years, rank in class at the end of the sixth semester, courses in progress during the seventh semester, and courses planned for the eighth semester (or a statement that those in the seventh will continue through the eighth semester), and the probable date of graduation.

For the student in the final semester of the senior year: grades for the first seven semesters, rank in class at the end of the seventh semester, courses in progress, and the probable date of graduation.

A student who has been graduated from high school but has not completed a sufficient number of college credit hours to be classified as a transfer student[1] should submit the complete application and a check or money order for $20, made out to the University of Illinois, to the high school principal with a request that they be mailed directly to the Office of Admissions ad Records *together with* a final transcript of the high school record, including all grades received, final rank in class, and date of graduation.

The same procedures must be followed by a beginning-freshman applicant who wishes to enter a term other than the fall term. (Those wishing to enter the Department of Architecture may apply only for the fall term; those wishing to enter the Department of Art may apply only for the fall and spring terms; those wishing to enter the Jane Addams School of Social Work may apply only for the fall term.) The following dates should be observed in order that the admitted applicant can be scheduled for the most advantageous time to register.

Beginning-Freshman Application Deadlines

Term in which applicant wishes to enter	*Earliest date for submission of application*	*Recommended deadlines*[2]
Fall	October 15 of the previous year	July 1
Winter	September 1	December 1
Spring	December 1	March 1
Summer	March 1	June 1

1. A beginning-freshman applicant who has attempted fewer than 12 semester hours (18 quarter hours) of college level work must have an official transcript of that work forwarded to the Office of Admissions and Records. If the applicant is currently enrolled at the time the application is submitted, the transcript should include the courses in progress.

2. If vacancies still exist in the desired program, the deadline may be extended until further notice. Conversely, if all vacancies are filled before the suggested deadline, admission consideration ends and the applicant is so notified.

Requirements for Admission to Undergraduate Study

Colleges and Curricula	Minimum Scholastic Requirements[3]		High School Subject Recommendations	Number of Units
	Beginning-Freshman	Transfer Average	To help insure that the beginning-freshman applicant is best prepared to enroll in required courses in the freshman year, the academic colleges strongly recommend the following high school subjects. Students who have not completed the recommended high school subjects may be required to take University courses in addition to those normally required for the degree. For definition of units, see Beginning-Freshman Applicant requirements above.	
ARCHITECTURE AND ART Architecture (All Programs)	Satisfactory combination of class rank and test scores	3.00	English (required) Mathematics, including algebra plane geometry trigonometry Science (except general science) and social studies: one or more in each for a total of	3 2 1 ½ 5
Art (All Programs)			English (required) No other recommendations	3
History of Architecture and Art				
BUSINESS ADMINISTRATION (All Programs)	Satisfactory combination of class rank and test scores	3.00	English (required) Mathematics, including work in algebra, geometry, and trigonometry	3 3

EDUCATION Curriculum in Teacher Education (Elementary)	Satisfactory combination of class rank and test scores	Under 90 hours: 3.30 90 hours or more: 3.50	English (required) Mathematics, including algebra and plane geometry Additional units from literature, history, social studies, mathematics, and science (excluding general science)	3 2 5
ENGINEERING (All Programs)	Satisfactory combination of class rank and test scores	3.00	English (required) Mathematics, including work in algebra, geometry, and trigonometry Chemistry	3 3 1
HEALTH, PHYSICAL EDUCATION, AND RECREATION Option I—K-12 Certification Option II—Secondary School Certification Option III—Noncertification	Satisfactory combination of class rank and test scores	Under 90 hours: 3.30 90 hours or more: 3.50	English (required) Biology Chemistry Physics Algebra	3

3. These are *minimum* scholastic requirements. When capacity is limited in a particular program, higher scholastic standards may be set and admission priority will be granted in the order of scholastic excellence.

Colleges and Curricula	Minimum Scholastic Requirements[3]		High School Subject Recommendations	Number of Units
	Beginning-Freshman	Transfer Average		
LIBERAL ARTS AND SCIENCES Curricula: General, preprofessional, mathematics and computer sciences, chemistry, and physics (except prenursing)	Satisfactory combination of class rank and test scores	3.00	English (required) Mathematics, including algebra and plane geometry One foreign language Additional units from at least two of the following: foreign language, literature, history, social studies, mathematics, and science (excluding general science)	3 2 2* 5
Curriculum in prenursing		3.50		
Teacher Education (Secondary) For teaching areas at the secondary level, see *Teacher Education Curricula, College of Liberal Arts and Sciences.*		Under 90 hours: 3.30 90 hours or more: 3.50	*A student who completes 4 units of the same language in high school is not required to take a language to graduate from the College of Liberal Arts and Sciences.	
JANE ADAMS SCHOOL OF SOCIAL WORK[4]		3.50		

3. These are *minimum* scholastic requirements. When capacity is limited in a particular program, higher scholastic standards may be set and admission priority will be granted in the order of scholastic excellence.

4. Applicants must have junior standing (90 quarter hours or 60 semester hours) and must be approved by the admissions committee of the Jane Addams School of Social Work. Interested applicants must initially apply for admission to the College of Liberal Arts and Sciences, general curriculum. Spaces in this program are limited, and subsequent admission to the undergraduate programs in social work will be determined after a review of the applicant's qualifications.

Students in all the foregoing categories must have included on their high school transcripts their official scores on the tests administered by the American College Testing Program (ACT) or the College Board Scholastic Aptitude Test (SAT). Information about where and when to take the tests may be obtained from the high school counselor. An applicant who has not taken either of these tests should write to ACT Registration, Box 414, Iowa City, Iowa 52240.

A *Transfer-Student Applicant* is one who, prior to applying for admission to Chicago Circle, has attempted at an accredited college or university, with passing or failing grades, 18 or more quarter hours (12 or more semester hours) of university-level work and must have achieved a minimum transfer grade point average of 3.00 (A=5.00) on the basis of all work attempted. See *Grading and Grade Point System of the University*. Some colleges and curricula request a higher minimum grade point average (consult individual college and curricula listings).

Transfer grades for all work attempted are used in computing the transfer student's average. However, a particular college or school may not accept all courses toward the baccalaureate and may delete credits and grades for such courses.

A student transferring to the University who was dropped from a previous collegiate institution for disciplinary reasons must submit a petition to the director of Admissions and Records, who forwards the petition to the appropriate agency.

Transfer applicants not presently enrolled in college should mail the application in the appropriate envelope addressed to the Office of Admissions and Records. At the same time, they should request their high school principal and the registrar of each collegiate institution they have attended to send official transcripts to the Office of Admissions and Records, University of Illinois at Chicago Circle, Box 4348, Chicago, Illinois 60680.

Applicants enrolled in college at the time they submit an application should comply with the directions above. Such applicants should not wait until completing the final term at the previous institution but, during the last term they are enrolled, should request that the transcript from that institution include a list of the courses they are taking. (See *Intercampus Transfers*.) The cumulative grade point average may make it necessary to delay final decision on an application until work has been completed at the institution from which transfer is planned. In any event, the final transcript should be sent to Chicago Circle as soon as possible after the final term is completed.

A *Readmission Applicant* is a former student at the University of Illinois who has previously attended any of the three campuses of the University as a regular student. Readmission applicants are considered for readmission on the basis of their status at the time they left the University, any college work they have completed elsewhere since their last attendance at the University, and the capacity at Chicago Circle. See *Transfer to and from Urbana-Champaign*.

Students who did not complete at Chicago Circle the term immediately preceding the one in which they wish to enroll are considered "former students." If they wish to enroll in the fall term, the previous spring term is the "immediately preceding" term unless that term was used as the Off-Quarter

Vacation. In that case, the summer term would be the "immediately preceding term."

Former students who left the University on academic-drop status, regardless of whether they have attended another collegiate institution in the interval, or who withdrew during the final ten days of instruction of a term, must submit a petition to the dean of the college concerned when they apply for readmission. Admission is granted upon approval of the dean of the college concerned and of the director of Admissions and Records.

Former students who left the University on clear status or on probation but have attended another collegiate institution from which they were dropped or where they have earned a scholastic average below 3.00 may be readmitted to the University only upon approval of their petition by the dean of the college concerned.

Scholastic probation at the University of Illinois may not be cleared by attendance at another institution except by special action of the dean of the student's college.

A former student who was dropped for disciplinary reasons must submit a petition to the director of Admissions and Records, who forwards the petition to the appropriate agency.

Applicants who have previously attended the University of Illinois either at Urbana-Champaign or at the Medical Center and who do not come under the classification of Intercampus Transfers must submit the application and $20 application fee, plus transcripts required for all transfer-student applicants. They must meet the designated cumulative grade point average of the desired college and curriculum. Students who fail to meet this requirement may file a petition for admission with the Office of Admissions and Records. See *Admission by Special Action.*

Note: A student whose *only* previous registration at the University of Illinois was in correspondence or extramural courses or as an unclassified student or nondegree-candidate summer-term-only registrant must present complete records of all scholastic work as appropriate and must meet the admission requirements of the chosen college and curriculum.

The following dates should be observed to schedule admitted transfer and readmission applicants for the most advantageous times to register.

Transfer-Student and Readmission Application Deadlines

Term in which applicant wishes to enter	*Earliest date for submission of application*	*Recommended deadlines*[5]
Fall	February 1	July 1
Winter	September 1	December 1
Spring	December 1	March 1
Summer	March 1	June 1

5. If vacancies still exist in the desired program, the deadline may be extended until further notice. Conversely, if all vacancies are filled before the suggested deadline, admission consideration ends and the applicant is so notified.

An *Irregular-Student Applicant* is a person holding a bachelor's degree who wishes to continue study by registering in an undergraduate college. Admission as an irregular undergraduate student in no way implies any commitment by the University to admit the student to a graduate program. The Graduate College will ordinarily not accept credit earned by an irregular undergraduate student if the student is later admitted to graduate study. To be admitted to this classification, a student must submit an Irregular Student Petition (available at the Office of Admissions and Records) with the application and must meet the admission requirements for the undergraduate program desired. However, the only transcript necessary is the one from the institution that awarded the baccalaureate. Such applicants are urged to observe the deadlines stated for the transfer-student applicant. The dean of the college reviews the application, transcripts, and petition and makes a recommendation to the Office of Admissions and Records, which notifies the applicant of admissibility.

An *Unclassified-Student Applicant* is a person 21 years of age or over who does not meet the requirements for admission as a degree candidate or one who wishes to take a few courses without earning a baccalaureate.

Students wishing to apply as unclassified students must fill out the regular undergraduate application and submit it with the $20 nonrefundable fee. Admission requirements for unclassified student status are as follows: 1) Proof of high school graduation or a GED certificate (for students with fewer than 18 quarter hours of college credit); or 2) statement of good standing from the last collegiate institution attended (for students with 18 or more quarter hours of college credit); or 3) evidence that a baccalaureate was awarded by a four-year college or university. Students who fail to meet these requirements may file a petition for admission with the Office of Admissions and Records. (See *Admission by Special Action.*) All of the above must submit a written statement outlining their reasons for seeking admission under this classification, and a list of desired courses. Admission must be approved by both the dean of the appropriate college and the director of Admissions and Records.

An *Early-Admission Applicant* is a superior high school student who wishes to enter the University of Illinois at Chicago Circle at the completion of the junior year in high school. The program is designed to permit the particularly able mature student to begin an academic career at the university level prior to high school graduation, providing all the other requirements for a beginning-freshman applicant are met.

The following credentials must be submitted to the Office of Admissions and Records by those students wishing to apply for early admission:

1. Application for admission and the nonrefundable $20 application fee.
2. Official copy of high school transcript, reflecting the most recent class rank and all courses completed or in progress.
3. A letter of recommendation from the high school principal.
4. American College Test scores or Scholastic Aptitude Test scores.
5. A letter from the parents or guardians stating why they believe the student should be granted early admission.
6. A recommendation from the Student Counseling Service at the University of Illinois at Chicago Circle indicating chances for scholastic success.

7. A written statement from the applicant explaining the objective in seeking early admission.
8. The successful completion of any University subject examinations that may be necessary in order to meet admission requirements.

High test scores on ACT or SAT as well as a superior high school record are prerequisites for admission to this program. (Students should rank in at least the upper 10 percent of their high school class.)

Each case is considered on an individual basis by the director of Admissions and Records and the dean of the college concerned. Such applicants are encouraged to have all required credentials in the Office of Admissions and Records approximately thirty days before the first day of instruction of the term the student wishes to enter.

A *Foreign Student* (one who resides outside the United States of America) may apply for admission by presenting credentials substantiating superior scholastic achievement and official certification either by the educational institution issuing the document or by a local or United States government official. The application, a financial statement on the form provided with the application, original or certified copies of education credentials, and a check or money order for $20 (nonrefundable application fee) should be sent to the Office of Admissions and Records in the special envelope provided.

Credentials for foreign-student applicants must include all secondary and post-secondary level studies completed to date, grades or examination results received (both failing and passing), maximum and minimum grades obtainable, rank in class, degrees, diplomas, certificates earned, and length of the school year. Original documents in languages other than English must be accompanied by official English translations.

Applicants whose native language is not English must take an English proficiency test even though they may have attended an institution or institutions where some or all of the instruction was presented in English. The proficiency test prescribed is the Test of English as a Foreign Language (TOEFL), and arrangements usually can be made to take it in the country in which the applicant lives. If that is not possible, arrangements may be made by writing to the Educational Testing Service (ETS), Box 899, Princeton, New Jersey 08540. A minimum score of 480 is required on the TOEFL for admission to the University. TOEFL is not required for students from countries where English is the native language, for foreign students who have been graduated from an accredited high school or four-year college or university in the United States, or for those born outside the United States who have received US citizenship.

If the foreign applicant is admissible, performance on the English test either (1) excuses the student from further study of English or (2) indicates the need for additional study of English. In the latter event, a placement test administered by the director of Foreign Student Affairs is required prior to registration. The results of the placement test determine whether the student is required to register for one or more zero credit courses in English. If so, the program of credit courses is reduced accordingly, and a longer time may be necessary for completion of degree requirements.

Deadlines for Foreign Student Applications:[6]

Term in which applicant wishes to enter	*Earliest date for submission of application*	*Application must be on file not later than*
Fall	October 1 of preceding year	July 1
Winter	August 1	October 1
Spring	November 1	January 1
Summer	March 1	April 1

Talented Student Program for Illinois High School Seniors

Upon completion of the junior year in high school, superior students who can meet University requirements may attend University classes for college credit in one or more of the four terms at Chicago Circle or they may enroll for college credit in extramural courses or in correspondence courses offered by the Office of Extension (see *Correspondence Study*). Each case is considered individually, and the director of Admissions and Records, the dean of the college concerned, and the department offering the course must concur in the high school's recommendation for acceptance. Above average test scores (see item 3 below) and a superior high school record are prerequisites for admission to this program.

Ordinarily, such work taken at the University of Illinois should not be used to accelerate the high school work of a secondary-school student but should be used as a means of broadening and enriching the student's educational program. These students are expected to complete all high school courses required for graduation. The courses taken at the University by superior high school seniors are over and above the regular secondary-school curriculum.

Grades and course credits are recorded on the student's permanent University of Illinois record and appear on any official transcript issued to or for the student. If the student enters the University after graduation from high school, the courses are credited toward University graduation if they are applicable to the chosen degree program. For applications and information for prospective students for this program of study, inquiry should be made to the Office of Admissions and Records, University of Illinois at Chicago Circle, Box 4348, Chicago, Illinois 60680.

6. These dates are for applicants who apply while residing outside the United States and who require the necessary paper (I-20 form) with which to secure an F-1 visa to enter the United States. Such forms are *not* sent until and if the applicant has submitted all credentials (including TOEFL scores) and the Office of Admissions and Records has determined eligibility for admission.

Foreign-student applicants (as defined above) who are transferring from another accredited college or university in the US or who are in this country at the time they submit applications for admission must comply with the above procedures. In addition, they must submit official transcripts from each institution attended, including courses in progress, if any. If they are on F-1 visa status, they should observe the deadlines stated above. However, those having permanent-resident immigrant status should observe the deadlines for beginning-freshman, transfer, and readmission applicants.

Students applying for admission to extramural or resident courses under the provisions of this program should arrange for the following materials to reach the Office of Admissions and Records within the deadline periods established for other admissions:

1. A recommendation from the high school principal, specifically endorsing the superior student for admission to a particular course or courses during the time the student is continuing high school studies.
2. A completed application for admission, including the $20 nonrefundable application fee.
3. An official copy of the high school transcript covering all work thus far completed in high school, including a record of courses in progress (if applicable) and the most recent rank in class. This transcript must be accompanied by test scores on either the College Entrance Examination Board (SAT) or the American College Testing Program (ACT). Above average test scores are prerequisites to this program.
4. The applicant's own statement of personal qualifications for undertaking college-level work and an indication of the specific course or courses in which enrollment is desired.

Each application is considered on an individual basis by the director of Admissions and Records, the dean of the college concerned, and the department offering the course. The program is available during the summer immediately following the applicant's junior year in high school, provided the appropriate records can be submitted.

Substitutions for and Exemptions from the Admission Requirements

General Educational Development Tests. The high school level General Educational Development Tests (GED Tests) cover the following subjects: English, mathematics, social studies, and natural science. Successful completion of the tests satisfies the following admission requirements:

1. English requirement.
2. High school graduation.
3. Validation of credits earned in and graduation from an unaccredited high school.

Completion of the tests does not satisfy the 16 units requirement. At least one additional unit of credit must be presented from another source (high school or college).

The General Educational Development Tests may be taken by persons in these categories:

1. Persons 19 years or older who have not been graduated from high school.
2. Persons, regardless of age, who have not been graduated from high school, who have been out of high school for one year, and who have written approval of the director of Admissions and Records.

The University of Illinois does not accept credit granted through the General Educational Development college-level examinations.

Subject Examinations in certain areas may be requested by a student who, lacking one or more of the high school units, feels able to pass the prescribed examination. This request should be initiated in the Office of Admissions and Records.

Admission by Special Action. A student not otherwise eligible for admission may be admitted, with the approval of the director of Admissions and Records and the dean of the chosen college, provided evidence is submitted that clearly establishes ability to do satisfactory work in the curriculum or the courses in which enrollment is desired. The appropriate form should be requested from the Office of Admission and Records.

Admission with Advanced Standing

Advanced standing consists of college-level credit acceptable to the University. The application of such credit toward a degree, however, is at the discretion of the dean of the college offering the degree.

In all cases, the transferred credit accepted by the University is subject to review by the student's college and major department for evaluation of its applicability to a particular degree, and the student is expected to conform to all the requirements of the chosen curriculum. See *Ninety-Hour Rule.*

Credit from Other Institutions

Fully Accredited Institutions. Work successfully completed in other fully accredited institutions (either those approved by one of the regional accrediting associations or those approved by one of the agencies recognized by the Council on Post Secondary Education) is generally accepted by the University on an hour-for-hour basis, as shown on the official transcripts received from those institutions. For consistency, credit in semester hours is converted to credit in quarter hours. See *Quarter Hours.*

Provisionally Accredited Institutions. Work completed in a provisionally accredited institution is accepted only on a *deferred* basis. To receive such transfer credit, a student must earn at least a 3.00 (A=5.00) average (or higher if prescribed by the curriculum the applicant wishes to enter) within the first 18 to 45 quarter hours of work in residence at the University of Illinois or in another fully accredited collegiate institution. A student who fails to validate transferred credit within the validation period then must pass proficiency examinations in order to receive credit for work at the provisionally accredited institution.

Unaccredited Institutions. Credit from unaccredited institutions is not accepted. However, credit in courses taken in such institutions may be established by proficiency examinations. See *Proficiency Examinations for Enrolled Students.*

Junior College Credit. Admission of transfer students to the University of Illinois is based *only* on transfer work, the nature of which has prepared students to continue in baccalaureate programs. Junior college students should check with their junior college counselors to determine those two-year college courses that have been designated baccalaureate-oriented.

Ninety-Hour Rule. Credit transferred from an accredited junior college is limited only by the provision that the student must earn at least 90 quarter hours required for the degree after attaining junior standing at the University of Illinois or at any other approved four-year institution, ***except*** the residence requirements for a degree from the University must be met. See *Requirements for Graduation.* When a school or college requires three years of preprofessional college credit for admission, at least the last 45 quarter

hours of preprofessional credit must be earned in an approved four-year collegiate institution.

College Level Examination Program (CLEP) Credits. If credits have been awarded by other accredited institutions on the basis of CLEP examination test scores, equivalent credit will be granted by UICC to those students who present on their transcript, exclusive of the CLEP credit, course work from that institution sufficient to qualify the student for transfer student status (18 quarter hours). Transfer credits based upon CLEP examinations placed upon the student's UICC transcript apply toward degree requirements only after review by the college in which the student wishes to earn the degree. Students enrolling at UICC without transfer student status may forward CLEP examination scores to the Office of Admissions and Records for possible credit in terms of the cut-off scores applicable to all presently enrolled students. See *Credit through the College Level Examination Program* for complete information.

Credit for Military Service

Completion of not less than six months of extended active duty in any branch of the armed forces of the United States entitles an applicant to six quarter hours of credit in physical education and six quarter hours in basic military science if the applicant has been honorably separated.

Credit is also allowed for those United States Armed Forces Institute (USAFI) courses for which the American Council on Education recommends credit at the baccalaureate level, provided the student has passed the appropriate USAFI end-of-course test or examination.

Credit for service schools successfully completed and for other courses taken while the student was in service may be allowed after the applicant is approved for admission. It is the enrolled student's responsibility to consult an admissions officer in the Office of Admissions and Records for an evaluation of service courses for which transcripts are presented.

No credit is allowed for the college-level General Educational Development Tests.

Credit through the Advanced Placement Program

This program, administered by the College Entrance Examination Board (CEEB), is designed for those high school students about to enter college who wish to demonstrate their readiness for courses more advanced than those ordinarily studied during the freshman year. College credit is awarded to those students who earn sufficiently high grades on the examinations covering basic freshman-course subject matter. Many high schools offer advanced classes in one or more of the following subjects: American history, art (history of art, studio art), biology, chemistry, classics (Virgil, lyric), English, European history, French (language, literature), German, mathematics (calculus AB, calculus BC), music, physics (physics B, physics C—mechanics, physics C—electricity and magnetism), and Spanish. The University encourages able high school students to enroll in these courses and to write the examinations in one or more of the foregoing subjects. The examinations are prepared by joint national committees of high school and college teach-

ers and are administered by the Educational Testing Service. These examinations, graded by other national committees, have the following values: 5—extremely well qualified, 4—well qualified, 3—qualified, 2—possibly qualified, 1—no recommendation. It is the student's responsibility to have official grade reports sent from the CEEB Advanced Placement Examination to the Office of Admissions and Records before credit can be awarded.

The University of Illinois at Chicago Circle makes these specific credit recommendations:

Humanities

Classics—Virgil

1. Grades of 5, 4, and 3: 4 quarter hours of credit at the lower-division level.
2. Grade of 2: Refer student to the department for possible credit or advanced placement.

Classics—Lyric

1. Grades of 5, 4, and 3: 8 quarter hours of credit at the lower-division level.
2. Grade of 2: Refer student to the department for possible credit or advanced placement.

English

1. Grades of 5, 4, and 3: 12 quarter hours of credit in English 101, 102, 103.
2. Grade of 2: No credit.

French

1. Grades of 5 and 4: 8 quarter hours of credit.
2. Grade of 3: Examination referred to the department.
3. Grade of 2: No credit.

German

1. Grades of 5 and 4: 8 quarter hours of credit.
2. Grade of 3: Examination referred to the department.
3. Grade of 2: No credit.

Music

1. Grades of 5, 4, and 3: 8 quarter hours of credit in Music 130 and 131.
2. Grade of 2: No credit.

Spanish

1. Grades of 5 and 4: 8 quarter hours of credit.
2. Grade of 3: Examination referred to the department
3. Grade of 2: No credit.

Note: Classics, French, and German papers do not carry automatic credit in a particular foreign language course. Hence, the course for which the student is best qualified may be selected in consultation with the appropriate department. When such selection has been determined, credit, up to a maximum of 8 hours, will be granted in courses preparatory for that in which the student has been placed.

Social Studies

American History

1. Grades of 5 and 4: 8 quarter hours of credit at the lower-division level.
2. Grade of 3: Examination referred to the department.
3. Grade of 2: No credit.

European History

1. Grades of 5 and 4: 8 quarter hours of credit at the lower-division level.
2. Grade of 3: Examination referred to the department.
3. Grade of 2: No credit.

Note: No more than 8 quarter hours of advanced placement credit may be counted toward the major in history. All history majors are required to take 4 hours of 100-level history at the University of Illinois at Chicago Circle.

Natural Sciences and Mathematics

Biology

1. Grades of 5, 4, and 3: Credit for Biological Sciences 100, 101, 102 (15 quarter hours).
2. Grade of 2: No credit.

Chemistry

1. Grades of 5 and 4: Credit for three quarters of general chemistry (15 quarter hours) and permission to enroll in Chemistry 121.
2. Grade of 3: Credit for two quarters of general chemistry (10 quarter hours) and permission to enroll in Chemistry 114. Each student may take a proficiency examination in Chemistry 114 immediately after enrolling. If the exam is passed, credit is given in that course also and the student is permitted to register in the next chemistry course in sequence.

Mathematics

1. Grade of 5 on the AB or BC examination: Credit in Mathematics 130, 131, 132, 133 (20 quarter hours) and advanced placement in any course for which Mathematics 133 is a prerequisite.
2. Grade of 4 on the AB or BC examination: Credit in Mathematics 130, 131, 132 (15 quarter hours) and advanced placement in Mathematics 133.
3. Grade of 3 on the AB or BC examination: Credit in Mathematics 130, 131 (10 quarter hours) and advanced placement in Mathematics 132.
4. Grade of 2 on BC examination: Credit in Mathematics 130 (5 quarter hours) and advanced placement in Mathematics 131.
5. Grade of 2 on the AB examination: Students in this category are invited to take a proficiency examination in Mathematics 130. Passing of this examination gives 5 quarter hours of credit in Mathematics 130 and advanced placement in Mathematics 131.

Physics

1. Grades of 5 and 4 on the B examination: Credit in Physics 101 and automatic admission to proficiency examinations in Physics 102 and 103.
2. Grade of 5 and 4 on the C examination: Credit in Physics 101 or 111 and automatic admission to proficiency examinations in Physics 102 and 103 or Physics 112, 113, and 114.
3. Grade of 3 on the B examination: Automatic admission to proficiency examinations in Physics 101, 102, and 103.
4. Grade of 3 on the C examination: Automatic admission to proficiency examinations in Physics 101, 102, and 103 or Physics 111, 112, 113 and 114.

Credit Earned through the American College Test or the College Board Scholastic Aptitude Test

A student whose American College Test subscore in English is 27 or higher or one whose verbal subscore on the Scholastic Aptitude Test is 623 or higher is given 4 hours of credit in English Composition 101. Those whose American College Test subscore in English is 25 or 26 may register for the honors sequence in English Composition 101 and 102. No comparable provisions exist for the other subscores on the ACT or for the mathematics subscore on the SAT.

Credit through the College Level Examination Program (CLEP)

The College Level Examination Program (CLEP) administered by the College Entrance Examination Board is designed to award credit to students who demonstrate a high level of proficiency in college level work. Students may earn proficiency credit at UICC by achieving satisfactory scores on these regularly administered examinations. A maximum of 45 quarter hours of credit on the basis of CLEP examination scores may be applied toward degree requirements. It is the student's responsibility to have official score reports sent from the College Entrance Examination Board to the Office of Admissions and Records before credit can be awarded.

General Examinations. Students may establish credit toward meeting general education graduation requirements based upon performance on one or more of the following CLEP General Examinations: (a) Humanities, (b) Natural Sciences, and (c) Social Sciences-History. The following scores have been established by the University of Illinois at Chicago Circle for the granting of general education credit:

Humanities

1. Scores of 542-603, four (4) quarter hours credit.
2. Scores above 603, eight (8) quarter hours credit (see note below).

Natural Sciences

1. Scores of 592-661, four (4) quarter hours credit.
2. Scores above 661, eight (8) quarter hours credit (see note below).

Social Sciences-History

1. Scores of 498-564, four (4) quarter hours credit.
2. Scores above 564, eight (8) quarter hours credit (see note below).

Note: Colleges at UICC with general education requirements of less than 12 quarter hours require students to take at least 4 quarter hours in each general education area.

Subject Examinations. Students are advised to consult the appropriate department after enrollment to determine whether a given CLEP subject examination is offered and what level of competency is required for the awarding of credit.

Admission to the Summer Session

Applicants have several options for admission. The requirements and procedures are as follows:

1. Admission to the summer session only as nondegree candidates.

   For *beginning-freshman applicants,* the only requirement is a statement from the high school that the student has been graduated or will be by the first day of instruction, or scores from the General Educational Development Test.

   For *transfer-student applicants,* eligibility consists of a statement from the last college or university attended that the student is eligible to return to that institution, either on clear or probationary status.

   Students admitted on this basis are not admitted to an academic college, but are classified as "summer session only."
2. Admission to one of the academic colleges for the summer, to continue in the fall. Requirements and procedures are the same as for admission to all other terms, depending on whether the student is a beginning-freshman or transfer-student applicant.
3. Any student on summer-session-only status who decides to continue in the fall quarter should notify the Office of Admissions and Records and should submit all necessary credentials.

Selection of College and Curriculum

If, as a result of participating in the Early Career Planning Program offered by the University's Student Counseling Service, the admitted applicant wishes to change the college and/or curriculum originally designated on the application, the student should consult an admissions officer in the Office of Admissions and Records.

Additional Records

If, in individual cases, records in addition to those listed for prospective applicants are needed, the applicant is notified by the Office of Admissions and Records. Such records may include a recommendation from a college dean, an Illinois residence clarification, name clarification, approval for admission to specific programs, or other documents.

Permit to Enter

After a student has been admitted, either a Permit to Enter or a Notice of Readmission is sent, as appropriate. These documents are statements of confirmation of reserved space in the college and curriculum desired and a description of any advanced standing allowed on admission or readmission. Also enclosed are the instructions to be followed in order to complete registration. The permit and instructions are valid only for the term stated thereon and may not be used for subsequent terms.

Registration Procedures

Registration is the act of enrolling in an approved program of courses after a new or readmitted student has been granted a Permit to Enter or a continuing student advance enrolls. Registration includes:

1. Course placement tests. (Not required of readmitted or continuing students.)
2. Program advising and approval.
3. Payment of tuition and fees indicated on fee assessment cards issued by the Office of Admissions and Records, or arrangement for deferment of a portion of tuition and fees by the Bursar.

Until *all* of the foregoing procedures (where applicable) have been completed, the student is not fully registered in the term to which admission has been granted. A registration is not complete until the fee assessment card and the fee receipt card have been deposited with a Business Affairs cashier, regardless of whether the student is subject to payment of tuition and fees.

A *program* consists of the courses and sections in which a student is currently registered.

Placement Tests

Required of most students registering for the first time in the University of Illinois, these tests determine course placement and are not taken until after an applicant receives notice that admission has been granted to the desired term. Instructions about the tests are clearly stated in the material enclosed with the notice. A new student must ascertain from those instructions whether the placement tests in a foreign language, mathematics, and chemistry must be taken, since all tests are not required of all students.

Academic Advising

New and former students who have been granted admission or readmission to a fall quarter are scheduled for conferences on campus during the summer months. At that time, they are advised by representatives of the several colleges, who assist them in selecting courses for the fall term.

Residual registration is also held prior to the beginning of instruction of the fall term. Newly admitted, readmitted, and continuing students who did not advance enroll receive information regarding that period of registration.

Students admitted and readmitted to the winter, spring, and summer terms and continuing students who did not advance enroll during the pre-

ceding terms meet with college advisers, select courses, and pay tuition and fees at the residual registration times scheduled for those terms.

Tuition, Fees, Charges, and Refunds

Tuition and appropriate fees are assessed all students and are payable in full as part of registration. The amount of tuition and the service fee varies with the number of credit hours for which the student registers, and subsequent change in the number of hours carried could result in a change from the amounts originally assessed. Tuition (but not all fees) also varies according to the Illinois resident or nonresident status of the student. The following schedules apply to the fall, winter, and spring terms and to the summer session and are subject to change without notice.

Tuition and Fees

	Full Program				Partial Program			
	Range I		Range II		Range III		Range IV	
Fall, Winter, Spring								
	12 quarter hours and above		5½ through 11½ quarter hours		½ through 5 quarter hours		0 credit only	
	Res.	Nonres.	Res.	Nones.	Res.	Nonres.	Res.	and Nones.
Tuition (except those holding exemptions)	$165	$495	$113	$333	$ 62	$172	$ 31	
Service Fee	47	47	35	35	21	21	11	
Hospital-Medical-Surgical Insurance	10	10	10	10	10	10	10	
Total	$222	$552	$158	$378	$ 93	$203	$ 52	
Summer								
	8 quarter hours and above		Above 3 but less than 8 quarter hours		Above 0 through 3 quarter hours		0 credit only	
	Res.	Nonres.	Res.	Nonres.	Res.	Nonres.	Res.	and Nonres.
Tuition	$124	$372	$ 85	$250	$ 47	$129	$ 24	
Service Fee	36	36	27	27	17	17	9	
Hospital-Medical-Surgical Insurance	10	10	10	10	10	10	10	
Total	$170	$418	$122	$287	$ 74	$156	$ 43	

Residence Classification. The residence classification of an applicant is determined on the basis of information given on the application and other credentials. Tuition is assessed in accordance with this decision. A student who has a legitimate cause for change of status may petition for a change on a form provided by the Office of Admissions and Records. Petitions are considered *within thirty days* from the date designated in the official University

calendar as that upon which instruction begins for the academic period for which tuition is payable. However, if the nonresident tuition was not assessed on or prior to that date, the claim for refund may be filed *within thirty days* after the nonresident tuition was assessed and the student was given notice of its assessment. Additional evidence to substantiate a request may be required. A student who expects to ask for a change of residence classification is advised to request that the adjustment be made prior to the registration period.

In the event a student claiming residency is dissatisfied with an adverse ruling by the director of Admissions and Records, a review of such decision by the legal counsel of the University may be obtained by filing a written request with the director of Admissions and Records within twenty days after receiving notification of the ruling.

Further information concerning residency may be secured from the Office of Admissions and Records. A brochure titled *Regulations Governing Assessment of Resident or Nonresident Student Fees* is also available.

Tuition for Zero-Credit Courses. Students taking one or more courses for zero credit, but no courses for credit, are assessed for tuition and fees as follows:

a. *For study on campus:* One-half of the Range III resident tuition and one-half of the Range III service fee, each rounded to the next higher even dollar, and the full hospital-medical-surgical fee. (No charge will be assessed, however, for University employees who register at the request of their department only in zero-credit courses especially established to improve the work of the employee.)
b. *For study off campus,* including graduate registration in absentia: One-half of the Range III resident tuition, rounded to the next higher even dollar, but no service fee and no hospital-medical-surgical fee.

Students simultaneously taking one or more courses for zero credit and one or more courses for credit are assessed for tuition and fees on the basis of the credit course(s) only.

Exemptions and Assessments. A student who qualifies under the stated conditions may be exempted from one or more of the following charges:

Tuition is waived for:

1. Holders of tuition-waiver scholarships.
2. All academic employees of the University or allied agencies on appointment for at least 25 percent but not more than 67 percent of full-time service.
3. Nonacademic employees of the University or allied agencies in status appointments or in appointments designed to qualify for status in an established class (e.g., trainee, intern) for at least 50 percent of full-time services who register in regular University courses for not to exceed:

   Six credit hours or two courses in a term if on full-time appointment,

   Four credit hours if on a 75 percent to 99 percent time appointment, or

   Three credit hours if on a 50 percent to 74 percent time appointment, provided that (1) they meet conditions and eligibility for admission as prescribed by the Office of Admissions and Records, (2) are not students as defined in Civil Service Rule 7.7c, and (3) have approval by their employing departments of enrollment and of a makeup sched-

ule to cover any time in course attendance during their regular work schedule.

The waiver of tuition also applies to any additional hours of registration that keep an employee within the same fee assessment credit range. An employee whose total registration is in a higher range than that authorized by the tuition waiver pays only the difference between the waiver authorization and the higher range of the total registration.

Nonacademic employees in a status, learner, trainee, apprentice, or provisional appointment may enroll without payment of tuition in regular courses directly related to their University employment for no more than 10 credit hours per term provided they have made application and received prior approval for enrollment as required by procedures issued by the director of nonacademic personnel and set forth in *Policy and Rules—Nonacademic.*

4. Holders of graduate tuition-and-fee waivers awarded by the Graduate College.
5. Holders of outside-sponsored grants or contracts that provide payments to cover the total costs of instruction.
6. Cooperating teachers and administrators who receive assignment of practice teachers. Such persons who register in University courses are exempted from both tuition and the service fee for one quarter or summer session for each quarter of service rendered. The exemption shall apply to the quarter or summer session of registration, as designated by the student, that is concurrent with, or following, the term of service, but must be applied no later than one calendar year from the beginning of the term of service. Concurrent registration on more than one campus of the University or in University extramural courses constitutes one quarter or session of eligibility for exemption.
7. Persons registered in noncredit seminars only.
8. University employees registered at the request of their departments in noncredit courses especially established to improve the work of the employee.
9. Emeriti.

The *nonresident portion of tuition* (if the enrollee is subject to payment of tuition) is waived for:

1. All staff members (academic, administrative, or permanent nonacademic) on appointment for at least 25 percent of full time with the University or allied agencies.
2. The faculties of state-supported institutions of higher education in Illinois holding appointments of at least one-quarter time.
3. The professional staff in private and public elementary and secondary schools in Illinois.
4. The spouses and dependent children of those listed in items 1 and 2. (Dependent children are those who qualify as dependents for federal income tax purposes.)
5. Persons actively serving in one of the armed forces of the United States who are stationed and present in Illinois in connection with that service.
6. The spouses and dependent children of those listed in item 5, as long as they remain stationed, present, and living in Illinois.

For fee assessment purposes, a staff appointment must require service

for not less than three-fourths of the academic term. Specific dates marking completion of service for three-fourths of the term shall be established by the Chancellor or his designee on each campus. Staff tuition-and-fee privileges do not apply to students employed on an hourly basis in either an academic or nonacademic capacity or to persons on leave without pay.

For fee assessment purposes, a permanent nonacademic employee is defined as a person who has been assigned to an established, permanent, and continuous nonacademic position and who is employed for at least 25 percent of full time. University employees appointed to established civil service positions whose rate of pay is determined by negotiation, prevailing rates, or union affiliation are entitled to the same tuition-and-fee privileges accorded other staff members under the regulations.

A student who resigns a staff appointment, or whose appointment is cancelled before service has been rendered for at least three-fourths of the term, becomes subject to the full amount of the appropriate tuition and fees for that term unless withdrawal from University classes is effective at the same time the appointment becomes void or unless clearance for graduation is filed within one week after the appointment becomes void.

Fees

The *Service Fee* is annually distributed proportionately to the following services and activities: operating expenses and bond debt service of the Chicago Circle Center and parking; Student Activities Funding Committee, which distributes funds in support of student activities; student Health Service; student intramural activities; and intercollegiate athletics.

The service fee is waived for:

1. All the staff members of the University or allied agencies who are on appointment for at least 25 percent of full-time service.
2. Holders of tuition-and-fee waivers awarded by the Graduate College.
3. Students registered in absentia.
4. Students registered in courses taught off campus.
5. Holders of grants or contracts from outside sponsors approved if the service fee is charged to the contract or to grant funds.
6. Cooperating teachers and administrators who meet the qualifications of item 6, tuition waiver exemptions.
7. Persons registered in noncredit seminars only.
8. University employees registered at the request of their department in noncredit courses for the purpose of improving their work.
9. Emeriti.

The *Hospital-Medical-Surgical Insurance Fee* is the same for all students, regardless of the number of hours for which they are enrolled or of their Illinois residence status. All students enrolled and in attendance at Chicago Circle are covered by a health insurance policy and an accidental death and dismemberment insurance policy for which they pay a fee each term at registration. Eligible dependents of insured students (spouse and/or unmarried dependent children under 19 years of age) may also be insured if the student makes application to the Insurance Office within the first ten days of instruction.

Students who withdraw from the University on or after the first day of classes do not receive an insurance fee refund since they remain insured for

the balance of the term from which they withdrew. Special provisions exist for students to be covered by this insurance during their approved Off-Quarter Vacation or for the term immediately following graduation, irrespective of their registration for that part of the year. For further information, consult the Insurance Office, 1219 University Hall, Ext. 2870.

A student who presents evidence of insurance in force that provides equivalent coverage may petition the University Insurance Office for a refund of this fee. Refunds are not made on any other basis. The student should submit proof of such coverage to the Insurance Office before the tenth day of instruction. Refunds are made before the end of the term. For information regarding the Health Service, see *Student Affairs.*

Personal Deferments of Tuition and Fees

Students who do not have a financial aid award or a tuition waiver may pay their tuition and fees in two installments. At least one-half of the assessed tuition and fees must be paid at the time of registration and the deferred portion must be paid by the end of the fourth week of instruction.

Arrangements for personal deferments may be made with a representative of the Bursar's Division during regular registration periods. There will be a $2 charge for this service. Late registration fines and parking fees are not deferable.

Students will not be permitted to register if they have not paid all of their tuition and fees for a previous term. Students with a financial aid award or tuition waiver are not entitled to a personal deferment.

The following schedule presents some of the typical amounts involved in a personal deferment.

Personal Deferment Schedule*

	Range I 12 quarter hours and above		**Range II** 5½ through 11½ quarter hours		**Range III** ½ through 5 quarter hours	
	Res.	**Nonres.**	**Res.**	**Nonres.**	**Res.**	**Nonres.**
Tuition and fees	$222	$552	$158	$378	$ 93	$203
Deferment service charge	2	2	2	2	2	2
Minimum amount payable at registration	112	277	80	190	48	103
Maximum amount deferable at registration and due 4th week of instruction	112	277	80	190	47	102

*Amounts are subject to change. Refer to the summer Timetable for the Personal Deferment Schedule applicable to the summer session.

Other Fees and Charges

One or more of the following additional fees and/or charges are assessed as applicable.

The *Course-Visitor Fee* of $15 is assessed all class visitors who are not in Range I in the tuition and fee schedule.

The *Late-Registration Fine* of $15 is assessed all students who complete registration after classes have begun.

The *Lost-Photo-Identification-Card Fee* of $2 is assessed for replacing a lost or destroyed Photo-Identification Card, issued to the student at the time of first registration at Chicago Circle. The cost of replacing the student fee receipt card alone is 50 cents.

The *Special-Examination Fee* of $10 is assessed for a special examination taken in the hope of obtaining credit in a course that has been failed at the University of Illinois. See the Student Handbook (University of Illinois at Chicago Circle).

Refunds

Refunds of a portion of tuition and fees may be authorized for students withdrawing from the University or from one or more courses as provided below. All requests for withdrawals should be initiated in the office of the college in which the student is enrolled.

Refunds on Withdrawals from the University. Withdrawal *within the first ten days of instruction* results in a refund of the full amount of tuition and fees, *except for the nonrefundable charge.* After the tenth day of instruction, no refund is issued.

Refund on Withdrawal from a Course. If withdrawal from a course is completed during the first ten days of instruction and results in a reduction in the student's program to a lower tuition-and-fee range, the full difference is refunded. For withdrawals after the tenth day of instruction, no refund is issued.

Refund on Withdrawal by a Visitor. A full refund is issued if the withdrawal is made *within ten days after payment of the fee.* Thereafter, no refund is made.

Refund on Withdrawal to Enter Military Service. A student who withdraws from the University to enter military service must be on active duty within ten days after withdrawal in order for a refund of tuition and fees to be authorized. It is *the student's responsibility* to present proof of active-duty status. The most effective way of presenting such proof is to have the personnel officer of the unit to which the student is assigned certify to the University the date of assignment to active duty.

Full credit is allowed for all courses in which the student has a grade of C or higher and a W, withdrawn without penalty, is recorded for courses in which the grade is below C.

For additional credit information for the student who enters military service see *Transfer and Withdrawal.*

Cancellation of Enrollment. Students who wish to cancel their registration must do so *prior* to the first day of classes by informing the Office of Admissions and Records, 1-120 Library. In that event, the total amount paid will be refunded.

Off-Quarter Vacation

A student may elect to attend any three terms in the calendar year beginning winter quarter. If a term other than the summer is chosen as vacation, or Off Quarter, an application must be filed with the Office of Admissions and Records before the first day of instruction of the term desired as vacation. Application blanks for the purpose are available in that office. If the vacation term is other than the summer session, the student must attend the summer session of that calendar year in order to retain status as a continuing student, namely, one who does not need to apply for readmission.

Concurrent Registration

Concurrent registration at campuses of the University of Illinois is permissible. A student enrolled at Chicago Circle or at the Medical Center may obtain an Application for Concurrent Registration at the Office of Admissions and Records of the primary campus. Concurrent registration requires permission of the dean of the college in which the student is enrolled.

Registration as a Visitor

The privilege of attending classes as a visitor is granted on and after the first day of instruction and only by the instructor of the class with the approval of the dean of the college concerned. Registration forms may be obtained from the Office of Admissions and Records, 1-120 Library. Visitors are not permitted in laboratory, military, or physical education classes.

A visitor is not allowed to write an examination (including a proficiency examination) for course credit or to participate in class activities.

A registered student on a full-fee schedule or a person who is a permanent nonacademic employee of the University does not pay a visitor fee.

Transfer Information

Current and former students at Chicago Circle who are seeking to transfer to another campus of the University or to another institution should ascertain what records are needed and when Chicago Circle transcripts should be sent. See *Transcripts.*

Transfer to other campuses of the University of Illinois for the student who is not currently enrolled is governed by the regulations for readmission. See *Readmission Applicant.* Since Urbana-Champaign is on the semester system and Chicago Circle on the quarter system, such transfer is most easily made at the end of an academic year or at the end of the fall quarter or semester.

Intercampus Transfer. A currently enrolled student in good academic standing at the Chicago Circle campus may apply for admission to the same college for the immediately ensuing term at the Urbana-Champaign campus. The same is true of students enrolled at the Urbana-Champaign campus who wish to apply to Chicago Circle for the next session. Such applications do not require the application fee.

Note: "Immediately ensuing term" may mean either the summer or fall term providing the applicant completed the spring term at the other campus.

For further information regarding the procedures and deadline dates, interested students should consult the Office of Admissions and Records at their present campuses.

Admission to the University of Illinois at the Medical Center (Medicine, Dentistry, Nursing, and Pharmacy Colleges and the Schools of Associated Medical Sciences and Public Health). Application must be made on official application blanks obtained from the Office of Admissions and Records of the University of Illinois at the Medical Center, 1737 West Polk Street, Chicago, Illinois 60680.

Transcripts

Students may request copies of their official transcripts by writing to the Office of Admissions and Records. Students who are in debt to the University or who have been admitted to the University pending the receipt of credentials are not eligible to receive transcripts until these obligations are cleared. All official transcripts are mailed to the recipient. Students should allow at least two weeks from the date of their request for their transcripts to be processed. There is no charge for transcripts.

Withdrawal

Withdrawal from the University is governed by specific regulations that students should observe to protect their academic standing. Failure to do so results in a grade of E (failure) in each course in which they are registered appearing on the record. Students who wish to withdraw should initiate official withdrawal action in the college in which they are enrolled. Withdrawal initiated during the final ten days of instruction requires submission of a petition in addition to the application for readmission if a student subsequently wishes to return to the University.

A student who has been charged with an offense that may result in disciplinary action may not officially withdraw from the University until the hearing of the case has been conducted by the appropriate disciplinary committee.

Withdrawal to Enter Military Service. If withdrawal occurs during the first five weeks of instruction, the student does not receive any academic credit. If withdrawal occurs during the sixth to eighth week (inclusive) one-half credit is received in those courses in which grades are C or better at the time of withdrawal and W (withdrawn without penalty) in those courses in which grades are below C. After the eighth week, full credit is allowed for all courses in which the student is earning C or better, and W is recorded for courses in which the student is receiving grades below C.

The above regulations are effective *only* if the student goes on active duty within ten days after the withdrawal, and it is the student's individual responsibility to present proof of that fact. The most effective way of presenting such proof is to have the personnel officer of the assigned unit certify to the University the date of assignment to active duty.

For regulations governing refunds to the student who enters military service, see *Refunds*.

Confidentiality of Records

In maintaining student records, the University assumes implicit trust and, accordingly, uses extreme care in recording and disseminating information about students. Printed guidelines for the release of such information, based on the Family Educational Rights and Privacy Act of 1974, are available in the Office of Student Affairs, 809 University Hall.

Special University Programs, Opportunities, and Activities

Writing Center

The Writing Center, sponsored and operated by the Department of English, provides tutorial service and individualized instruction for students who wish to improve or reinforce their composition skills. Tutors diagnose writing problems and suggest ways to overcome deficiencies that may impede academic performance. Students in the freshman composition program may seek individualized help in solving those writing problems that cannot be dealt with in the composition classes. Undergraduate English-education majors and graduate teaching assistants gain professional experience at the center, located in 107 Addams Hall and open 9-3, Monday, Tuesday, Thursday, and Friday, beginning in the second week of each term.

Educational Assistance Program

The Educational Assistance Program was created in 1968 to increase the number of inner-city students in the University, many of whom would normally not be in attendance at Chicago Circle. These students often encounter academic or financial situations that demand special consideration. In support of these applicants, the Educational Assistance Program offers appraisal of the academic ability of prospective students through special diagnostic and placement tests; individual academic advising; uniquely designed courses in mathematics, English composition, speech, chemistry, and study skills; personal counseling; and assistance in applying for aid to the Office of Financial Aid. Applicants must submit to the Educational Assistance Program a complete application, a high school transcript showing class graduation rank and courses in progress, and ACT or SAT scores. For further in-

formation, write Educational Assistance Program, 1212 Science and Engineering Offices, University of Illinois at Chicago Circle, Box 4348, Chicago, Illinois 60680, or call 996-8717.

Honors Programs

The University and its academic units encourage excellence and provide special opportunities for academically superior and motivated students. Honors programs usually involve special advisers, special courses, individual work, seminars, and in some cases, a senior thesis.

Edmund J. James Scholars are selected from each freshman class entering the University of Illinois and from the currently enrolled freshmen and sophomores. James Scholars, named in honor of one of the University's most distinguished presidents, have available to them resources of the University not normally utilized by the average college student. The program offers unusual opportunities for an able and industrious student and provides an excellent background for graduate and professional study. A James Scholar is expected to work for a degree with distinction and to carry at least one honors course every term when such courses are available.

No monetary award is given to James Scholars. James Scholars who need financial assistance should apply for monetary scholarships.

High school seniors who have demonstrated high academic potential are eligible to apply for admission to the program. The selection of James Scholars is made on the basis of high school grades, performance on aptitude and achievement tests, other test scores, and the recommendation of high school principals and counselors. Transfer students and students in residence are chosen on the basis of their performance in college and the recommendation of their instructors.

Further information about the James Scholar Program and an application may be obtained by writing the Director, University Honors Programs, University of Illinois at Chicago Circle, Box 4348, Chicago, Illinois 60680.

Honors Recognition

Recognition for superior academic achievement at Illinois is given by the University and by the college and department in which a student is enrolled.

To be considered for academic honors in any term, candidates must complete 12 academic hours exclusive of basic military science, courses in which they have excused or deferred grades (except in an honors course), and courses completed by an examination for which "pass" is recorded.

Special recognition is given at Commencement to those students who have been on the Dean's List of their colleges for at least three of the four terms since the last commencement. A student who has been in residence all four terms must have a cumulative grade point average of 4.00 (B) or higher in addition to being on the Dean's List for three of the four terms.

The names of new freshmen or of transfer students who enter in the fall quarter are included if they have been on the Dean's List for the fall and winter quarters preceding Commencement.

Transcripts prepared for these students carry the notation, "Honors Recognition, 19——."

Edmund J. James Scholars who have, since the last commencement, maintained the academic record required by the James Scholar Program are also recognized. The transcripts of these students carry the notation, "Edmund J. James Scholar, 19——."

The *Dean's List* for the colleges and schools is composed each term of those full-time students who have an average of B (4.00) or better in all courses, exclusive of basic military science. Each college may establish requirements above this minimum. This list is posted in the college offices.

For Graduation with Honors, see *Graduation Requirements.*

Honors Credit

Students desiring honors credit in a regular course commit themselves to independent work by means of a Learning Agreement (if the instructor is willing) during the first four weeks of the term. Successful completion of such work, if certified by the instructor at the end of the term, will be identified on the student's record by an ampersand (&) provided the grade is A or B.

Honor Societies

Alpha Lambda Delta

Membership in this national honor society is open to all freshmen women who meet the qualifications established by the National Council of Alpha Lambda Delta. To be eligible, a candidate must be a degree candidate with a cumulative average of 4.50 or better. Additionally, she must have been registered for a minimum of 15 quarter hours during the term in which she qualifies and have entered that term with a maximum of 44 hours to her credit. For further information about this honor society, consult the Office of Student Affairs or University Honors Programs.

Phi Eta Sigma

Membership in this national honor society is open to all freshmen men who meet the qualifications established by the National Grand Chapter of Phi Eta Sigma. To be eligible, a candidate must be a full-time student who has attained a 4.50 grade point average in his first academic term or a 4.50 cumulative average within the first two or three terms of his freshman year.

Phi Kappa Phi

Founded in 1897 (Chicago Circle chapter in 1973), Phi Kappa Phi is an honor society for juniors, seniors, and graduate students. Faculty members are also elected to a limit of ten each year. Elections to Phi Kappa Phi are made in accordance with its own rules. The University assumes no responsibility for elections.

The society offers membership to students of high caliber who meet its requirements:

For juniors (108 quarter hours, 45 of which must be graded hours in residence), a cumulative grade point average of 4.75.

For seniors (135 quarter hours, 45 of which must be graded hours in residence), a cumulative grade point average of 4.50.

For graduate students, successful completion of the minary examination, no more than two B grades, and no grade below B.

Detailed information is available in the Office of University Honors Programs.

All-Campus Courses

The sections of the all-campus course, "Contemporary Topics," afford an opportunity for the examination and discussion of various topics of contemporary interest by groups of faculty members and students drawn from different disciplines. The course is open to those with junior standing or with the consent of the instructor. The number of sections varies from term to term. Sections are arranged and administered by the Office of University Honors Programs, and information on planned courses is available from that office.

Proficiency Examinations for Enrolled Students

Each term the University gives proficiency examinations, similar to regular term examinations, in courses ordinarily open to freshmen and sophomores. Proficiency examinations for English Composition 101 and English Composition 102 are scheduled regularly. In other subjects the student must obtain the consent of the head or chairman of the department concerned. Proficiency examinations in more advanced undergraduate subjects may also be given if the head or chairman of the department recommends and the dean of the college concerned approves. There is no fee for these examinations.

The grade given in proficiency examinations is either "pass" or "fail" but a student does not receive a "pass" unless at least the equivalent of a C is earned. Neither grade is included in the computation of the student's average and no official record is made of a "fail."

A student who passes a proficiency examination is given the amount of credit toward graduation regularly allowed in the course if the course is acceptable in the curriculum. However, if such credit duplicates credit counted for admission to the University, it is not given.

Proficiency examinations are given only to:

1. Persons who are in residence at Chicago Circle.
2. Persons who, after having been in residence, are currently registered in a correspondence course at the University of Illinois.
3. Persons who, though not currently enrolled, are degree candidates at the University and need no more than 15 quarter hours to complete their degree requirements.
4. Persons enrolled at one University of Illinois campus who wish to take an examination being given at another campus. They must secure an Application for Concurrent Registration from the Office of Admissions and Records.

Proficiency examinations may *not* be taken:

1. By students who have received credit for more than one term of work in

the subject in advance of the course in which the examination is requested.
2. To raise grades or to improve failures in courses.
3. In a course the student has attended as a listener or as a visitor.

Proficiency examinations, including CLEP, are not considered an interruption of residence for graduation, and credit earned in such examinations is not counted toward satisfying the minimum requirement toward the degree if the last 45 quarter hours must be earned in residence.

College Level Examination Program (CLEP) for Enrolled Students

Enrolled UICC students may earn credit based on CLEP examinations of the College Entrance Examination Board. See *Credit from Other Institutions*. Those students who wish to attempt any CLEP examination should consult the Testing Service, 996-3477, before registering for any CLEP subject or general examination. The CLEP general and subject examinations are given once each month and a fee is charged.

Audio Information Service

Audio materials in a laboratory setting are provided primarily for foreign-language students; however, the service is also extended to other areas of study to supplement or enhance regular classroom work or to develop special programs. Students come to the laboratory at their convenience to practice their language skills by means of taped lessons geared to their course work. A dial-access information retrieval system in the laboratory enables them to select a lesson by operating a telephone dial. They may also use an individual tape deck that gives them complete control over the lesson. In addition to the laboratory, special services include the Home Telephone Access System, which allows students to obtain taped programs from any on- or off-campus telephone 24 hours a day; the Testing Service, by which instructors can test students' aural comprehension or oral performance ability; and various special programs. A catalog of audio tape recordings is available on request. The Audio Information Service facilities, located on the third floor of Grant Hall, are open 8:30-4:30, Monday-Friday.

Foreign Study Programs (Study Abroad)

Study Abroad programs are available through several departments. The Department of French is cosponsor with the Urbana-Champaign campus of a program in Paris, France; the Department of Spanish is cosponsor of a program in Barcelona, Spain; and the Department of German cosponsors a program in Baden, Austria. The Department of Architecture cooperates with the Urbana-Champaign campus in a program in Versailles, France. Inquiries should be addressed to the appropriate department.

In addition, the College of Liberal Arts and Sciences has established a special course, LAS 299—Liberal Arts and Sciences Study Abroad, that provides credit for independent foreign study. Inquiries should be addressed to the campus coordinator of Year Abroad Programs, College of Liberal Arts

and Sciences, 350 University Hall. Information about additional foreign study opportunities can be obtained from the director of the University Honors Programs, 218 Science and Engineering Offices.

Office of Extension

Extension credit courses are open to all applicants who can meet course prerequisites. Courses in several areas of study are available at UICC and other locations in metropolitan Chicago. A list of courses may be obtained by writing to: Office of Extension, University of Illinois at Chicago Circle, 2603 University Hall, Box 4348, Chicago, Illinois 60680.

Courses at the 400 level are graduate level and are not open to undergraduate students.

Candidates for certain degrees may apply up to 90 undergraduate quarter hours earned in the extension program toward the baccalaureate. The number of quarter hours that may be credited toward the master's degree is determined by the graduate college on an individual basis. In both cases, other University requirements must be met and approval for the courses pursued must be secured from the college or school in which the degree is to be granted. Credit earned in extension courses may not necessarily be accepted as resident work.

Extension tuition is assessed apart from tuition and fees payable as part of registration in the resident academic programs of the colleges and schools at Chicago Circle.

Auditors or visitors may register in credit courses by obtaining the consent of the instructor and paying the regular fees assessed for the course. In multiple-credit courses, the visitor pays the lowest fee assessable.

Students who have completed three years in residence at the University and have earned a minimum of 135 quarter hours may do all or part of their senior year in extramural or correspondence study or in attendance at another accredited college or university if they meet all of the college requirements for a degree.

The *Professional Education Program in Social Work* of the Jane Addams School of Social Work and the Office of Extension has two components:

A Continuing Education Component, consisting of both credit and noncredit courses for the practicing social worker. Open to students holding an MSW or an advanced degree in an allied field.

An MSW Extension Component, consisting of credit courses selected from the first-year curriculum of the Jane Addams School of Social Work. Students may enroll for two MSW extension courses per term. Once admitted to the Jane Addams School of Social Work as an MSW candidate, the student may apply up to 12 quarter hours of UICC extension credit toward the MSW. For further information call 996-4629.

Noncredit courses are offered in a wide range of topics related to UICC academic programs. Call 996-2353 for further information.

Short Courses and Conferences are offered in a variety of subject matter areas. Call 996-7729 for further information.

Correspondence Study

Credit for correspondence courses taken through the University of Illinois may be allowed but only with the approval of the dean of the college concerned. After matriculation, students may, with the approval of the dean of their college, count toward the degree as many as 90 quarter hours of credit earned in correspondence study.

In addition, the final 45 quarter hours of work toward a degree must be earned in residence at the University of Illinois, unless students have previously completed three full years of resident work here.

Students, including those in high school, who wish to pursue correspondence study should write directly to Correspondence Courses, University of Illinois, 104 Illini Hall, Champaign, Illinois 61820.

Military Officers Education Program

Army

The principal objective of the college-level Military Officers Education Program is to develop commissioned officers for the Army Reserve and the Regular Army. It is specifically designed to enable potential leaders to prepare themselves for effective service in the army and also offers individuals training in developing the essential qualities of leadership required for success in either a civilian or a military career.

Participation in the college-level Reserve Officers' Training Corps (ROTC) program is offered on a voluntary basis to qualified students. Both male and female requirements for enrollment are:

1. United States citizenship (or resident alien).
2. Classification as a full-time student.
3. Ability to qualify for appointment as a second lieutenant before the candidate is 28 years of age. (Veterans can receive a waiver for age.)
4. Physical qualifications for a commission.

A student entering the University after successfully completing military training in high school or in a preparatory school that has an accredited junior division ROTC program is entitled, upon enrollment, to such placement as may be determined by the professor of military science. Instruction is offered through four-year and two-year programs. The four-year program consists of the Basic Course (the first two years) and the Advanced Course (the last two years). The two-year program consists of the Advanced Course and prior attendance at Basic Summer Camp. Both programs include attendance at Advanced Summer Camp between the junior and senior years. Cadets are issued, at no cost, uniforms, textbooks, and equipment necessary for the ROTC program.

Basic Course. The basic course is an introduction to ROTC and carries no military obligation. It is a prerequisite to enrollment in the advanced course, but it can be waived for veterans or for students who have attended the basis summer camp.

Advanced Course. All cadets who have successfully completed the Basic Course, meet the physical and academic requirements, and pass an officer-qualification test and a physical examination are eligible for selection by the

professor of military science for the Advanced Course. A cadet selected to enroll in the Advanced Course without prior enrollment in the Basic Course must successfully complete the Basic Summer Camp before such enrollment and have the approval of the professor of military science. A subsistence allowance of not less than $100 per month is paid to each cadet in the Advanced Course except during attendance at summer camp, when one-half of the pay rate of a second lieutenant on active duty with less than two years of duty is paid. Travel to and from camp is at government expense. Meals, housing, medical care, uniforms, and all equipment are also furnished while the cadet is at summer camp. Upon successful completion of the Advanced Course and completion of the degree requirements, cadets are commissioned as second lieutenants in the United States Army Reserve and may be offered a commission in the Regular Army.

Credit toward Graduation. All colleges and departments recognize military science courses as acceptable electives. The quarter hours accepted toward a degree by the various colleges are:

Art and Architecture	All advanced courses	16 hours
Business Administration	By petition only	
Education	All advanced courses	12
Engineering	Completion of program	5
Liberal Arts and Sciences	All advanced courses	16
Physical Education	All military science courses	25

Financial Assistance. The program offers financial aid to qualified cadets. The State of Illinois ROTC Scholarship Program and the 3-, 2-, and 1-year Army ROTC Scholarships are also available to qualified cadets. For further information, call 996-3451 or 3452 or visit the Military Officers Education Program, 716 Science and Engineering Offices.

Air Force

The Air Force ROTC program is available to all full-time students who desire to earn upon graduation a commission as a second lieutenant in the US Air Force. Scholarships are available to qualified students that pay full tuition and fees, all textbook costs, and $100 monthly subsistence allowance. Two programs are offered.

Four-Year Program. This program consists of four semesters of the General Military Course (GMC) and four semesters of the Professional Officer Course (POC). Students normally start this program as freshmen and must have four years of study remaining before receiving a degree. Students may withdraw from the GMC at any time. Participants in the POC are selected from qualified volunteer applicants. All POC students are required to attend one paid Air Force ROTC four-week training encampment, normally between the sophomore and junior years. The major areas of study during field training include junior officer training, aircraft and aircrew orientation, career orientation, survival training, base functions, and the air force environment.

Two-Year Program. This program consists of one paid six-week summer field training encampment and the four-semester Professional Officer Course (POC). Participants in the program are selected from qualified volunteer applicants. This program is designed for undergraduate and graduate students with less than four but at least two years of full-time study remain-

ing. The six-week field training is held at an air force base and is a prerequisite for entry in the POC. The major areas of study at field training are the same as in the four-year program with the addition of the GMC academic phase.

The courses are *all taught on the Illinois Institute of Technology campus.* For further information, students interested in this course of study should either call the Department of Aerospace Studies (567-3525) or go to IIT, Alumni Memorial Hall, Room 101, at the corner of South State Street and East 32nd Street.

Navy

Through the Naval Reserve Officers' Training Corps (NROTC) Program, young men and women prepare for rewarding careers as officers in the United States Navy or Marine Corps.

Scholarship program students are selected either by nationwide competition or from college program students recommended by the professor of naval science. For a period not exceeding four years, the navy pays for tuition, books, and fees and provides an allowance of $100 per month. Graduates of the program are commissioned in the US Navy or the US Marine Corps.

Upon successful completion of the college program, students are commissioned as reserve officers in either the US Navy or US Marine Corps. Program students are required to serve three years on active duty after graduation.

Two-Year Program. The two-year programs qualify students for comissions after participating in the NROTC program during their junior and senior years. Students can obtain two-year nuclear power scholarships or regular two-year scholarships. The college program is also offered to students on a two-year basis. Those selected for any of the three programs will attend a six-week summer program that will give them the background required to start naval science courses at the junior level. Students who are in their fourth or fifth quarters at Chicago Circle may apply for these programs.

Flight Indoctrination Program. During the junior or senior year, qualified midshipmen may enroll in the flight indoctrination program. Those students demonstrating strong performance in the Flight Instruction Program may volunteer for Navy flight training after commissioning.

During the summer months, students are assigned to naval ships and stations where their education as future naval officers is enhanced by on-the-job training. Scholarship NROTC students attend summer training each year; college program students attend during the summer preceding their last academic year.

The naval science courses consist of both a lecture and a laboratory period. The laboratory is held at the Illinois Institute of Technology each Thursday afternoon. Introduction to Naval Science, NS-015, is offered to freshmen in the fall quarter at UICC. Consult the current fall quarter Timetable for further details. Advance courses are held at Chicago Circle or at IIT depending upon the number of students participating. For further information on NROTC, call the Department of Naval Science, 567-3530, or stop in at their office at IIT, 125 Alumni Memorial Hall, South Dearborn and East 32nd Streets.

Graduation Requirements and Academic Regulations

Regardless of the college or curriculum in which the student is enrolled, the following specific requirements must be fulfilled for graduation:

1. The admission requirements for the requested curriculum must be met.
2. All deficiencies in entrance credit must be removed.
3. The student must demonstrate proficiency in written English by earning passing grades in English Composition 101 and 102 or by passing a proficiency examination or the equivalent. A transfer student may be certified by the Office of Admissions and Records as having been exempted without credit from the equivalent of English Composition 102 while previously attending a fully accredited institution.
4. The general education requirements of a *minimum* of 9 hours in approved courses in humanities, 9 hours in approved courses in social sciences, and 9 hours in approved courses in natural sciences must be fulfilled. However, the colleges and schools are authorized to increase these minimum requirements. Consult the graduation requirements of the colleges and schools for variations. Enrollment in these general education courses is determined in consultation with the appropriate college office and provides a broad educational base for the major and minor (Liberal Arts and Sciences), for a field of specialization (Business Administration), for the selected option (Art and Architecture, Engineering), or for work in the Colleges of Education and Health, Physical Education, and Recreation and the Jane Addams School of Social Work.
5. All graduation requirements of the chosen college and curriculum must be met.
6. The required minimum cumulative grade point average of 3.00 (A=5.00) or higher if prescribed in the specified curriculum must be met in all work offered for the degree and in all work taken at the University of Illinois.

7. 90 quarter hours must be earned at the University of Illinois or at any other approved four-year institution after attaining junior standing.
8. The residence requirement must be satisfied: Either the first 135 quarter hours or the last 45 quarter hours of University work must be taken at Chicago Circle. University of Illinois correspondence and extramural courses neither apply to satisfaction of the residence requirement nor interrupt residence. Proficiency credits, including CLEP, cannot be applied toward satisfying this requirement if the last 45 hours must be earned in residence.

For the specific college or school requirements that must also be met, see the appropriate sections of this catalog.

Graduation with Honors

The Chicago Circle Senate and the Board of Trustees establish the criteria under which students are awarded department, college, and University honors.

Department Honors (Departmental Distinction) may be awarded if the student has met the criteria established by the department in which the major is completed and by the college. The diploma and transcripts carry the designation Distinction, High Distinction, or Highest Distinction, as appropriate.

General College Honors are awarded the student recommended by the appropriate dean by virtue of a sufficiently high scholastic average and the fulfillment of scholastic and other conditions determined by the college from which the student will be graduated. The diploma and transcripts carry the notation of such an award.

Graduation with College Honors benefits the student when being considered for a graduate fellowship, an unusual job placement, or some other competitive opportunity.

The *Book of Academic Honors* contains the names of those students who have at least a 4.50 cumulative average, from college entrance through the term prior to graduation, for all work (exclusive of basic military science and physical education) taken at the University and who are in the top 3 percent of the students in their college who will be graduated with them. Transfer-student candidates for listing in the Book of Academic Honors must have earned 60 or more quarter hours at Chicago Circle. Furthermore, they must have a total cumulative average, *including all transfer credit,* as high as the lowest average listed for those honors candidates in that college who have completed all their work at Chicago Circle.

Additional prizes and awards are given to both undergraduate and graduating students who have meritorious records.

Degrees

A degree from the University of Illinois is awarded by action of the Board of Trustees on recommendation of the appropriate college and Senate. Degrees are conferred four times a year, at the end of each term. The student receives the degree in a stated curriculum. The graduation requirements in effect for a curriculum at the time of the student's admission to it become

the graduation requirements unless the student elects to meet revised degree requirements that subsequently may apply to that curriculum.

Approval of any necessary substitutions in graduation requirements rests with the college in which the student is enrolled.

The degree for each major is stated, together with the degree requirements, in the appropriate college section in this catalog.

Second Bachelor's Degree

A student in the College of Business Administration who completes 45 quarter hours of credit beyond the requirements for a first degree and meets all other requirements, including residence, may receive a second degree, which may be earned either concurrently with or subsequent to the first degree. In the College of Architecture and Art, the second degree may be earned by meeting the same requirements but only subsequent to the first degree. In the College of Engineering, a student must satisfy all the course work specified by the appropriate curriculum committee for an additional area of concentration, including residence, to receive a letter of certification from the dean of the college in lieu of the second degree. A student in the College of Liberal Arts and Sciences may also receive a letter of certification from the dean of the college upon meeting all departmental course and residence requirements for an additional field of specialization.

Academic Calendar

The Academic Calendar consists of the fall, winter, and spring quarters and an eight-week summer session. During the fall, winter, and spring quarters, a minimum of twelve quarter hours is required to maintain full-time student status. Eight quarter hours are required for the summer term.

Quarter Hours

During the fall, winter, and spring quarters, a University quarter hour represents one classroom period of 50 minutes weekly for one quarter in lecture or recitation and either the necessary preparation time or a longer time in laboratory or other work. In the summer session, the classroom period is 65 minutes. It is expected that most students spend the equivalent of two classroom periods of preparation for one classroom period per week of lecture or recitation. Each University quarter hour of credit is thus understood to represent the equivalent of at least three classroom periods of the student's time, and the credit value of a course is calculated in quarter hours on that basis. Those courses in which credit hours exceed clock hours may require additional readings, assigned papers, or other course work.

The number of quarter hours earned by the student determines, during the undergraduate period, classification within the University:

45 quarter hours—sophomore standing
90 quarter hours—junior standing
135 quarter hours—senior standing

To convert semester hours to quarter hours, multiply by 3/2; to convert

quarter hours to semester hours, multiply by 2/3. For example, 45 quarter hours equal 30 semester hours.

The minimum required for a degree is 180 quarter hours. The required number of hours varies within the colleges, schools, and curricula. The student should refer to the section of this catalog that covers the college and curriculum to determine the hours requirement for a particular degree. The college office will also provide this information.

The Timetable

Quarterly Timetables must be consulted for courses to be offered during a given term; the frequency of the offerings is determined by the departments, colleges, and schools and as program requirements dictate and staff availability permits. Assurance cannot be given that specific courses will be offered each year. Requirements stated in the department sections serve as a guide to program planning; department advisers will counsel students on individual programs within the major.

Courses numbered 100 to 199 are open to all undergraduate students.

Courses numbered 200 to 399 are open only to juniors and seniors and those other students meeting course prerequisites.

Courses are grouped alphabetically. Following the number and title of each course is a statement of credit given, content, and prerequisites (if any).

Grading and Grade Point Systems of the University

Each student seeking a degree should thoroughly understand the meaning of grades and symbols and the grade point value of each grade.

Grades	*Equivalent*	*Grade Points per Hour*
A	Excellent	5
B	Good	4
C	Average	3
D	Poor but passing	2
E	Failure	1

Symbols (not included on computation of average):

W—Withdrawn from course without penalty (no grade).

Df—Grade deferred (graduate courses, independent study courses, and certain study-abroad courses only).

S—Satisfactory; **U**—Unsatisfactory. Used in graduate thesis research courses and graduate courses given for zero credit.

P—Pass; **F**—Fail. Used only in courses taken under Pass/Fail option. See *Pass-Fail Option.*

In—Incomplete. May be assigned if (1) the student is absent from the final examination and excused by the instructor; (2) the student has incomplete course work; or (3) the student is absent from the final examination. The student should not register for the course a second time but should arrange procedures for removing the In grade with the instructor who assigned it. An In grade must be removed by the end of the student's second quarter in residence, subsequent to its incurrence, or, if the student is not in residence, it must be removed by the end of the calendar year subsequent to the incur-

rence. An In that is not removed by the deadline is automatically revised to a grade of E.
Pass—Used for proficiency examinations and special examinations.
Fail—Used for special examinations.

Computing the Grade Point Average (for applying college probation and drop rules). Multiply the number of hours for each grade by the weight, add the products, and divide by the total number of hours. For example:

Grade	*Hours*	*Weight*	*Grade Points*
A	4	5	20
B	6	4	24
C	5	3	15
	15		59

This grade point average is 59/15 or 3.93.

Pass/Fail Option

Students may elect to take a course on the Pass/Fail option according to the following provisions:

1. The student must be in good standing as defined by the chosen college.
2. A maximum of 32 quarter hours of credit may be earned at Chicago Circle under the Pass/Fail option. If a student withdraws from a Pass/Fail course before the end of the last day of instruction in the sixth week of the term, the credit hours the course carries will not count toward the total of 32 authorized.
3. No more than one course per term may be taken under this option.
4. The option may not be used in any course required for the major including prerequisite and collateral courses.[1]
5. The Pass/Fail option in a course must be elected by the end of the 10th day of instruction of the term.
6. The Pass/Fail option in a course cannot be revoked after the close of the 10th day of instruction in the term.
7. A college or school may by action of its faculty institute a more restrictive policy for any or all of the above provisions.
8. Instructors are not informed that the option has been elected but assign a letter grade in the usual manner. The Office of Admissions and Records retains a record of that letter grade, but it is not entered on the student transcript except as hereafter provided.
9. For courses taken under the Pass/Fail option, a grade of P is recorded on the transcript if a letter grade of A, B, C, or D is earned. If the letter grade E is assigned, an F is entered on the transcript. In and Df grades are replaced by P or F upon completion of the courses.
10. The grades of P and F are not used in the computation of the grade point average.
11. Grades of P or F are final and cannot be reconverted to letter grades except under the following circumstances: If, during the student's final

1. Collateral courses are those courses taken outside the major department that are essential to the major and are defined as such by each college.

term prior to graduation, it is found that one or more of the courses needed to satisfy major field requirements were completed under the Pass/Fail option at Chicago Circle (prior to the declaration of the major or prior to intercollegiate or intercurricular transfer), the student may elect that a sufficient number of "pass" grades be replaced by the originally assigned letter grades to meet major requirements. Only the minimum number of reconversions will be made. If such a minimum can be met by more than one selection of reconversions, the student may elect his preference. This same policy applies in the case of any additional restrictions instituted by a college or school under Provision 7.

Adding and Dropping Courses

A course may be added through the last day of instruction in the second week of the term. A course may be dropped without academic penalty through the last day of instruction in the sixth week of the fall, winter, and spring quarters and through the last day of instruction in the fifth week of the summer session. A college dean or director of an independent unit may approve exceptions in justified cases. If the course dropped is the only one in which the student is enrolled, withdrawal from the University must be initiated.

Withdrawal

Withdrawal from the University is governed by specific regulations that must be observed to protect the student's academic standing. Failure to do so results in a grade of E (failure) in each course in which the student is registered appearing on the record. A student who wishes to withdraw should initiate official withdrawal action in the chosen college. Withdrawal initiated during the final ten days of instruction requires submission of a petition in addition to the application for readmission if the student subsequently wishes to return to the University.

A student who has been charged with an offense that may result in disciplinary action may not officially withdraw from the University until the hearing of the case has been conducted by the appropriate disciplinary committee.

Withdrawal to Enter Military Service. If withdrawal occurs during the first five weeks of instruction, the student does not receive any academic credit. If withdrawal occurs during the sixth to eighth week (inclusive), one-half credit is given in those courses in which the grades are C or better at the time of withdrawal and W (withdrawn without penalty) in those courses in which the grades are below C. After the eighth week, full credit is allowed for all courses in which the grade is C or better, and W is recorded for courses in which the grade is below C.

The above regulations are effective *only* if the student goes on active duty within ten days after the withdrawal, and it is the individual student's responsibility to present proof of that fact. The most effective way of presenting such proof is to have the personnel officer of the unit to which the student is assigned certify to the University the date of assignment to active duty.

For regulations governing refunds to the student who enters military service, see *Refunds*.

Student Affairs

Oscar Miller, MA, Dean of Student Affairs
Harold Klehr, PhD, Associate Dean of Student Affairs; Director, Student Counseling Service
Marie L. Johnson, PhD, Associate Dean of Student Affairs
Weyman L. Edwards, MSc, Assistant Dean of Student Affairs
George M. Safford, BA, Assistant Dean of Student Affairs
Ronald L. Owens, MA, Assistant Dean; Director of Veterans Affairs
Leroy Pulliam, BA, Coordinator, Outreach and Recruitment, Veterans Affairs
Thom Porter Brown, BA, Director, Financial Aid
Carl C. Dalstrom, BS, Associate Director, Financial Aid
Herschel D. Wallace, BA, Assistant Director, Financial Aid
Marsha S. Weiss, BS, Assistant Director, Financial Aid
Katherine A. Edmunds, AB, Assistant Director, Financial Aid
Lawrence Fisher, BA, Financial Aid Counselor
Laurette A. Kirstein, MS, Director, Foreign Student Affairs
Paul D. Webb, ThM, Assistant Director, Foreign Student Affairs
Vidvuds Medenis, MD, Director, Health Service
Susan S. Erskine, MA, Director, Office of Organizations and Activities
Roberta Morin, BA, Assistant Director, Office of Organizations and Activities
Roland Q. Swaim, EdD, Director, Placement Services
Muriel Stone, BME, Assistant Director, Placement Services
Elinor Hite, MA, Assistant Director, Placement Services

The Office of Student Affairs focuses its attention on the development of each student as a total human being. To assist in this development of the individual student, the staff of the Office of Student Affairs provides the following services and programs: counseling concerning educational, vocational, and personal problems; financial aid for students; student health services; programs and services for foreign students; activities and services for student organizations; services for veterans enrolled in the University under the Readjustment Benefits Act of 1966 or the War Orphans' Educational

Benefits Act of 1956; student employment services on campus and off campus; and placement services for undergraduate and graduate students as well as alumni.

Dean of Student Affairs

The Dean of Student Affairs is a major officer of the University. He reports directly to the Chancellor and helps in the formulation of policy that governs student affairs; he also works closely with other members of the academic and the administrative staffs, with Student Government and other student organizations, and with the faculty Senate Committee on Student Affairs. Under the Dean of Student Affairs are the Associate Dean of Student Affairs, the Assistant Deans, and the Director of Veterans Affairs. The Dean of Student Affairs is also responsible for coordinating the activities and functions performed by the Office of Financial Aid, Student Employment, Foreign Student Affairs, Organizations and Activities, Placement Services, Student Counseling, and the Health Service. The Dean of Student Affairs is also responsible for monitoring the student disciplinary system of the University. The Office of the Dean of Student Affairs, along with the offices listed above, serves as the principal point of contact between the individual student, the student organizations, and the University administration. Problems faced by students in their adjustment to the University, including their relationships with each other, to extracurricular activities, to their college offices, to the University police, and to other administrative agencies may be brought to the Office of the Dean of Student Affairs or to any of the above offices for help in their resolution.

The associate dean and assistant deans are available daily for conferences with students or with their parents. These deans administer short-term loans up to $100 for emergency educational expenses and emergency aid, immediate cash, up to $10; certify good-student discounts for insurance; complete transfer recommendation forms; and provide notary public services.

An absent student may call the associate or assistant deans who then notify the instructors and college office so that the student may arrange to make up work. In addition, these deans work closely with honor societies and with various student activities.

Student Counseling Service

By providing personal counseling, specialized group services, career planning, and psychological testing, the Student Counseling Service aims to foster the educational, vocational, and personal development of the student so that maximum benefits may be obtained from the educational experiences. It is the privilege of the student to make use of the following services whenever the need arises.

Personal Counseling is offered on either an individual or a group basis to any student who seeks help in working through personal concerns and problems and in developing a positive, realistic self-image.

Educational and Vocational Counseling and career orientation are available to students who may be uncertain about their choice of college, major, or graduate or professional college or who wish to develop and assess their career plans.

Group Services of considerable variety are provided for the student who wishes to improve reading comprehension and speed, establish better study methods in order to learn with greater ease, analyze and improve test-taking skills prior to enrollment for college-level achievement tests and graduate school examinations, develop increased facility in vocabulary usage at different levels of communication, define vocational and career plans by making use of summer and part-time work experiences, or improve skills in relating to others in meaningful and mutually satisfying ways.

Individual and Group Tests are offered to registered students in support of educational, career, and personal counseling. In addition, the student interested in taking various national examinations for admission to graduate and professional colleges may wish to consult with the Student Counseling Service.

Test Scoring Service offers faculty members facilities for rapid scoring of tests and analyzing test items and benefits students by contributing to the improvement of classroom teaching and the evaluation of instruction.

The *Speech and Hearing Clinic*, under the auspices of the Student Counseling Service, provides, free of charge, facilities for hearing testing, diagnostic speech and voice evaluations, and correction of speech problems. Students who wish assistance in correcting speech difficulties, including those arising from foreign accents, hearing impairments, and voice or articulation problems should avail themselves of the services of this clinic, located in 202 Grant Hall.

The *Early Career Planning Program* is open to all incoming students and assists them in clarifying their career and occupational goals. Career interest and educational tests are given during a group testing session. A counseling appointment is then arranged where the student is encouraged to develop career choices and future plans and to explore career information source material. The program is offered to help the new student determine which college and curriculum of the University would best meet his or her educational needs. A general orientation to the University is provided and ways to achieve the most out of the University experience are discussed.

Health Service

Better physical and mental health for the students at Chicago Circle is the goal of the Health Service.

The University Health Service is located on the 11th floor of University Hall and is open 8-5, Monday-Friday. The Health Service provides ambulatory-clinic-type services for preventive medicine and treatment of illnesses. The professional staff consists of experienced physicians, most of whom have practiced for years as family physicians or specialists. Aside from handling general medical problems, the Health Service has a gynecologic clinic and a mental health unit staffed by psychiatrists and clinical psychologists. Laboratory, X-ray, and ECG services are also available. Beds for care of temporary acute problems are provided.

The cost of most medical expenses that cannot be assumed by the Health Service is covered by the student Hospital-Medical-Surgical Insurance, supervised by the Business Affairs Insurance Office.

Financial Aid

The University of Illinois at Chicago Circle and the Basic Educational Opportunity Grant and Illinois State Scholarship Monetary Award Programs subscribe to the premise that the primary responsibility for educational expenses rests with the student and the student's family. Once that responsibility has been met by the individual student applicant and family to the best of their ability (as determined by need analysis), the University will make available the necessary additional assistance insofar as its resources will permit.

In order to insure that the maximum effectiveness is made of University financial assistance resources, applicants for University-administered financial aid *are required* to apply for both a Basic Educational Opportunity Grant and an Illinois State Scholarship Monetary Award or furnish evidence that they are clearly ineligible for these programs.

Applicants for federal, state, and institutional programs for financial aid should be aware that the application process is complicated and takes a considerable period of time from the date of application to the announcement of an award of financial aid. Applicants are urged to complete carefully all application materials early. Do not wait until you have been accepted for admission.

Basic Educational Opportunity Grants (BEOG)

Basic Grant eligibility is determined on the basis of a family contribution schedule that is established annually by the US Commissioner of Education. A separate application is required and may be obtained from secondary school guidance counselors and the Office of Financial Aid. A student may receive a BEOG, if eligible, for four years of undergraduate study, unless an additional year of remedial or preparatory study has been required. Then a fifth year of eligibility will be allowed.

For a Basic Grant these conditions must be met:

1. The student must be a citizen or national of the United States or be in the United States for other than a temporary purpose and is or intends to become a permanent resident.
2. The student must be an undergraduate, capable of making satisfactory progress in the University.
3. The student must be enrolled for a minimum of 6 quarter hours.
4. The amount of the Basic Grant may not exceed one-half the cost of education, as determined by the US Commissioner of Education, or more than $1,400 per year.

Illinois State Scholarship Commission Monetary Awards

These grants are awarded by the Illinois State Scholarship Commission (ISSC). Students must file a *separate* application *directly* with ISSC. High school students may obtain these forms from their guidance counselors. Others, including enrolled UICC students, may obtain the ISSC form at the Office of Financial Aid. Illinois State Scholarship Commission monetary awards cover all or part of a student's tuition and fees, but no other costs at UICC.

Approximately 35 percent of UICC undergraduate students annually receive monetary awards. All UICC students are urged to apply to the ISSC for assistance, including those who hold state tuition waivers (such as General Assembly, Special Education) and Illinois Veterans Scholarships. In many cases ISSC awards *exceed* the value of tuition waivers and are available for full- and half-time study.

University-Administered Financial Aid

Financial aid for undergraduate students at the University of Illinois at Chicago Circle includes grants, scholarships, tuition waivers, loans, and employment, which the student applies for and receives through the Office of Financial Aid, located on the 13th floor of University Hall. Certain colleges of the University have limited scholarship funds that they award separately.

The Office of Financial Aid requires that applicants file the American College Testing Program (ACT) Family Financial Statement. High school students may obtain these forms from their guidance counselors. Others may obtain them from the UICC Office of Financial Aid. ACT will send the Student Financial Aid Report to students, after processing the Family Financial Statement, along with the Institutional Data Sheet, which the student must complete and send to the UICC Office of Financial Aid. While the ACT Family Financial Statement is preferred, students new to the University who must file the College Scholarship Service's Parent's Confidential Statement for other institutions may submit that statement to UICC. The Institutional Data Sheet will be forwarded to the student by UICC upon receipt of the Parent's Confidential Statement.

Students whose applications for financial aid are completed by May 1 will receive primary consideration. While it is impossible to specify exactly when a student will receive notification of award, the following critical dates indicate what the student may expect:

May 1	Students who have completed applications in the Office of Financial Aid before this date will receive primary consideration for financial aid if they qualify.
August 1	Students who complete their applications after this date and qualify for aid will receive, if additional dollars exist, award letters after the start of the fall quarter. If checks are involved, those checks will not be distributed to the student until after the middle of the fall quarter.
October 1	Students who complete their applications after this date will not be considered for fall quarter assistance. Award packages, if additional dollars exist, will begin with the winter quarter.
November 1	Students who complete their applications after this date will not be considered for fall or winter quarter assistance. Award packages, if additional dollars exist, will begin with the spring quarter.
February 1	Final deadline for applications for financial assistance. This means that students who do not complete their application file by this date will not be considered for any financial assistance for the academic year (*including summer session*). Stu-

dents who *do* complete their applications by this date and wish to be considered for summer session assistance (if it is available) must complete a special summer session application *in addition* to the materials required to complete an application file. Every student, including those students already receiving financial aid during fall, winter, and/or spring quarters who want to be considered for summer assistance, must complete this summer session application.

Loan Assistance

To be eligible for a loan awarded by the Office of Financial Aid, the student must prove financial need, unless applying for a LEEP loan, which is available under specific conditions.

National Direct Student Loan (NDSL)

This loan replaces the National Defense Student Loan.

1. The student must be a citizen or national of the United States or be in the United States for other than a temporary purpose and intend to become a permanent resident.
2. The student may borrow up to a total of $5,000 as an undergraduate. Ordinarily, students are permitted to borrow as much as $1,000 per academic year, but this amount may be exceeded under certain circumstances and as long as the total undergraduate limit is not exceeded. It should be noted that during the student's first two academic years, the National Direct Student Loan is limited to a total of $2,500.
3. Repayment does not begin until nine months after graduation or cessation of at least half-time study. Interest at 3 percent per year does not begin until repayment begins.
4. A student has up to 10 years to repay the loan, but a minimum monthly or quarterly payment may be required.
5. If a student transfers to another school, enrolls in graduate school, or enters military service, the Peace Corps, or Action Corps (formerly VISTA), repayment on the loan is deferred (upon request). At the time the student leaves UICC, more complete information about deferment possibilities is discussed.
6. Under certain conditions, part of the student's loan can be cancelled. The specific provisions for cancellation are detailed in the promissory note signed by the student.
7. The student must be enrolled at least half time (6 quarter hours per term), but the amount of the loan varies with the student's tuition and fee range.

Illinois Guaranteed Loan Program (IGL)

1. Illinois Guaranteed Loans are provided by banks and other lending institutions participating in the program. A list of lenders is available in the Office of Financial Aid.
2. The IGL application is available at many Illinois banks.

3. If a student is eligible for Federal Interest Benefits, the federal government will pay the 7 percent simple interest that accrues on the loan during the student's enrollment in school, during the nine-month grace period, and during authorized periods of deferment.

Eligibility for Federal Interest Benefits

1. If the adjusted family income is less than $15,000 and the loan request would not cause the total amount borrowed for the academic year to exceed $2,000, the borrower is automatically eligible for Federal Interest Benefits on the amount of the loan.
2. If the adjusted family income is less than $15,000 and the loan request would cause the total amount borrowed for the academic year to exceed $2,000, a need analysis is required on the amount requested to receive Federal Interest Benefits.
3. If the adjusted family income is equal to or greater than $15,000, a need analysis is required on the amount requested to receive Federal Interest Benefits.
   Note: A borrower who is not eligible for Federal Interest Benefits must make arrangements with the lender to pay the 7 percent interest while enrolled in school.
4. For any loan request that requires a need analysis, an ACT Family Financial Statement is required.
5. The student must be a US citizen or a legal permanent resident of the United States and a legal resident of Illinois.
6. The student must be enrolled at least half time (6 quarter hours per quarter or 4 quarter hours in the summer session) in a degree program.
7. Maximum loan amounts:

		Full-Time Maximum	Half-Time Maximum
FRESHMAN	000-045 credit hours	$1,000	$ 500
SOPHOMORE	046-090 credit hours	$1,500	$ 750
JUNIOR	091-135 credit hours	$2,500	$1,250
SENIOR	136-180+ credit hours	$2,500	$1,250
GRADUATE	each full year of study	$2,500	$1,250

8. The minimum loan amount is $150. The student may borrow up to $7,500 as an undergraduate with an aggregate of $10,000 for both undergraduate and graduate work.
9. Payments of not less than $30 per month must begin nine months after graduation or cessation of at least half-time study. The repayment period is normally for five years but can be extended up to ten years.
10. Deferment of repayment is to be arranged with the lender.

Law Enforcement Education Program (LEEP Loans)

As the program undergoes numerous changes, each year's current eligibility criteria should be obtained from the Office of Financial Aid. In previous years, LEEP loans were made available only to full-time students, both in-service and pre-service applicants. For current eligibility criteria and applications, consult the Office of Financial Aid, 13th floor, University Hall.

University Long-Term Loan (ULT)

1. The student must be enrolled at least half time (6 quarter hours per term), and making satisfactory progress.
2. There is no citizenship requirement, but the student must arrange for a cosigner acceptable to the University's Office of Business Affairs.
3. The student may borrow up to $5,000 as an undergraduate, but not more than $1,000 in any academic year.
4. The loan is to be repaid over a period of seven years, beginning four months after the student leaves the university.

Short-Term Emergency Loans

These loans are made for emergency educational expenses up to $100. The funds must be used for educational expenses excluding tuition and fees. Students in need of deferments of tuition and fee payments should consult the Accounts Receivable in the Office of Business Affairs. Short-term emergency loans are made only through the Offices of the Associate Dean and Assistant Deans of Student Affairs. In addition, these loans may cover general emergency situations that require no more than $10 at one time.

1. Loans are repayable in 45 days or by the end of the term in which the loan is made.
2. No interest is charged, but a $1 fee is charged for processing.
3. Loans are not usually processed during final exam week and during the period between terms. However, in extreme emergencies occurring during this period, a loan may be applied for if the student has proof of payment of fees and tuition for the next term.

Student Employment

The Job Center, a division of the Office of Financial Aid, administers the federally funded College Work-Study Program. In addition, the Job Center is the coordinating and approving office for all on-campus student employment.

For Work-Study students, this office assists in placing students in jobs and notifies the student and department when eligibility has been earned and need met. In order to receive Work-Study, students must complete the ACT and other financial aid forms in the same manner as for any other University-administered financial aid. Work-Study awards are made as part of a financial aid package on an annual basis and are subject to yearly renewal and reconsideration.

For employment in general, the Job Center acts as a liaison between on-campus and off-campus employers and students desiring full-time or seasonal employment. The listings on file in the Job Center encompass a wide variety of jobs, wage rates, and schedules to meet student needs.

Gift Assistance

Supplementary Educational Opportunity Grant (SEOG)

These grants are based on exceptional need and awarded according to strict guidelines set by the US Office of Education.

1. The student must be a citizen or national of the United States or be in the United States for other than a temporary purpose and intend to become a permanent resident.
2. The student must be an undergraduate, capable of making satisfactory progress in the University.
3. The student must be enrolled at least half time (6 quarter hours per quarter or 4 quarter hours in the summer session).
4. The amount of the SEOG cannot exceed one-half of the financial aid award made to an individual student by the institution and cannot exceed $1,500 in any one year and no more than $4,000 for the usual four years of undergraduate study.
5. The student may receive the grant for up to five years of undergraduate study if the institution determines that a fifth year of study is necessary for the student to complete an undergraduate degree.
6. The SEOG must be matched by an equal amount of other aid.

Law Enforcement Education Program Grants (LEEP Grants)

For full-time criminal justice personnel only, these grants are available to full- and part-time students. The grants range up to $250 per term and are designed to cover the cost of tuition and fees. A separate application, available in the Office of Financial Aid, must be filed each year. (Awards will be based upon the funding priorities established by the Law Enforcement Assistance Administration and yearly allocations.)

Illinois Veterans Scholarship

A separate specific application is required in lieu of or in addition to an application for financial aid. The scholarship is in the amount of tuition, the admissions application fee, and any College Level Examination Program (CLEP) fees incurred at UICC. The latter two fees are to be paid by the student and will be reimbursed at some time after enrollment. To be eligible, a veteran must have served honorably for not less than one year unless discharged in less than one year for medical reasons, must have been a resident of Illinois for not less than 6 months before entering service, and must have resided in Illinois for not less than one year before applying for the waiver. More complete information is available in the Office of Financial Aid, 13th floor, University Hall.

Grants in Aid

Dora Wells Foundation Fund. General grants in aid in varying amounts for students in any curriculum. First preference to graduates of Lucy Flower High School.

Alice D. Taylor Grants in Aid. For undergraduate students who demonstrate financial need; the amount varies.

Tuition Waivers

These waivers are deductions from the student's bill in the exact amount of tuition costs; *no fees* are covered. All tuition waivers awarded by the Office of Financial Aid are based on the student's financial need. *Very few* tuition waivers are available, particularly to foreign students.

To be considered for a tuition waiver a student must have applied for assistance to the Illinois State Scholarship Commission. A student who is denied aid by the ISSC for either of the following reasons is considered for a University tuition waiver:

1. Denied by the ISSC because eligibility (more than 15 terms in attendance) has been used up.
2. Denied by the ISSC for *non-financial* reasons, such as nonresidency or ineligibility for independent status.

A student who has been denied by the Illinois State Scholarship Commission for financial reasons is not considered for a University tuition waiver.

University Scholarships

Limited in number and amount, these scholarships are awarded to students with good academic records who can *also* demonstrate need. Funds come from a variety of sources, and some have specific conditions that must be observed in awarding them.

These conditions must be met:

1. Applicants must be United States citizens or resident aliens and must have a grade point average of 3.75 or better; some scholarships have higher grade point average requirements.
2. Some scholarships have been reserved by the donors for students in specific fields of study, such as architecture, art, business administration, engineering, social work.
3. Scholarships are awarded in various amounts usually ranging between $200 and $700, but some permit larger awards.

Unrestricted Scholarships

The following scholarships are unrestricted in terms of recipients, except for requiring a minimum grade point average of 3.75, and are awarded by the Office of Financial Aid in the same manner as the campus-based federal student aid programs. No special application or documentation is required.

Mary Davis Barnhart Scholarship. Awarded to worthy and deserving students.

Albert Bellamy General Cash Scholarships. For students in any curriculum; $150 to $400 each.

Henrietta Curtis Hill Braucher Memorial Scholarships. From a bequest in the will of the late Ralph W. Braucher; amount varies.

Educational Opportunity Scholarships. Small scholarships, in varying amounts, are provided from a fund supported entirely by individual donors.

Lucille E. Morf Scholarships. General scholarships, in varying amounts, for students in any curriculum.

Eric H. and Ruby V. Peterson Scholarships. General scholarships, in varying amounts, for students in any curriculum. Preference is given to students from Rockford, Illinois, and vicinity.

James D. and Clara Phillips Scholarships. General cash awards for students in any curriculum; $150 to $200.

Regensteiner Corporation Scholarships. Awarded annually by the Regensteiner Corporation as a good-neighbor gesture.

Gretchen Johanna and Paul Charles Schilling Scholarships. For students in any curriculum; maximum of $500 each.

Emerson F. Schroeder Awards. For students in any curriculum.

University Club Foundation of Chicago Scholarships. For students in any curriculum.

Etta and Laura Beach Wright Scholarships. For students in any curriculum; two scholarships of $250 to $300 each.

Restricted Scholarships

The following scholarships are restricted to students who have a grade point average of 3.75, meet the criteria indicated, have supplied the additional required documentation as specified, and are otherwise awarded by the Office of Financial Aid in the same manner as the campus-based federal aid programs:

AFL-CIO Scholarship. One $500 award given annually to a son or daughter or a member of former AFL unions. Applicants must submit evidence that a parent is a bona fide member in good standing of a labor organization. This is usually done through a statement on the union's stationery by one of the officers—president, recording secretary, financial secretary, or treasurer.

Lydia E. Parker Bates Scholarships. For students in architectural engineering, architecture, art, landscape architecture, and urban planning; amounts vary.

FMC Educational Scholarships. Derived from the income received from FMC Company stock given to the University of Illinois Foundation by an anonymous donor. Preference is given to students enrolled in engineering or business administration curricula; $350 to $1,000.

Dr. Hartwell C. Howard Memorial Scholarships. For premedical and predental students; $250 to $500.

Deloris Wade Huber Scholarships. Varying amounts for students in civil engineering.

Robert E. Kennedy Scholarships. For students interested in the foundry field. An applicant must demonstrate financial need and must be of good character and good health, a citizen of the United States, and enrolled in a mechanical, electrical, or other engineering curriculum related to the foundry industry. A candidate must show laboratory proficiency and scholastic achievement in subjects allied with the foundry field, thereby indicating a potential promise for work in that industry; amount varies.

Wensel Morava Scholarships. For young men and women between 17 and 22 years of age and of good health and good character. Applicants must be members of a church or Sunday school and must agree not to join a fraternity or sorority during their first two years as recipients. Applicants also must agree to assist, as alumni, a student with his or her expenses at the University if they are financially able to do so. Preference is given to students of Czechoslovakian descent; $100 to $600. Proof of Czechoslovakian descent must be submitted.

National Council of Jewish Women Scholarship. Awarded annually to a junior or senior in the College of Liberal Arts and Sciences. The student must be concerned about current social issues in the United States and must be preparing for a career related to constructive dealing with such issues. Preference is given to applicants residing in Evanston or Niles Townships; tuition and fees.

Calvin Barnes Nicholls Memorial Scholarships. For male students at any class level in any field of engineering; $350 to $1,000.

LaVerne Noyes Scholarships. Awarded to students who are direct descendents of American veterans of World War I; tuition and fees. Special application required.

Chicago Circle Physics Scholarship. Provides limited financial assistance to students of at least junior standing in one of the physics curricula; awarded upon recommendation of the Department of Physics.

Theodore R. Schlader Memorial Scholarships. For students in architecture, architectural engineering, electrical engineering, or other engineering fields; $300 each.

Frederick D. Secor Memorial Scholarships. For students in electrical engineering; $200 to $300 each.

Serbo-Croatian Language Program Scholarships. Scholarships in varying amounts established through the American Yugoslav Association for deserving students enrolled in Serbo-Croatian studies.

Leon Weisberg Memorial Scholarships. For students in the last two years of the architectural curriculum; $400.

Leigh F.J. Zerbee Scholarships. For students in civil engineering who are also enrolled in military science; maximum of $500. Grade point average may be waived.

For further information, about financial aid, consult Office of Financial Aid, 1308 University Hall, Box 4348, Chicago, Illinois 60680, telephone: 996-3126

Scholarships Administered by Colleges and Departments

Applications for the scholarships listed below may be obtained from the appropriate college or department.

College of Architecture and Art

AIA Chicago Chapter, Martin Roche Travelling Fellowship. Awarded biennially to outstanding students in the last two years of the architectural curriculum; approximately $700 for travel in a foreign land for not less than 60 days.

AIA Chicago Chapter Student Loans. For seniors in architecture who show promise of high professional ability; amounts vary, with a limit of $500 to any one person.

AIA Scholarship Program. For 4th- and 5th-year architecture students; amounts vary between $200 and $2,000.

Genther Projects Publications Award. For student architectural projects of outstanding interest to the University and the greater community around it.

Undergraduate Talent Waivers. Full tuition, no fees, awarded to students of architecture and art who show special promise of high professional ability.

Women in Construction Scholarships. Given annually by two women's organizations to junior or senior men or women who are enrolled in architecture; covers tuition, fees, books, and supplies.

Women's Architectural League Foundation Award. For outstanding students in the last two years of the undergraduate curriculum; $750 or more.

The following funds are used for scholarships, loans, prizes, travel, support of students projects, and general development:

College of Architecture and Art Development Fund
Argeropolos Scholarship Fund
James Leslie Gibbons Scholarship Fund
History of Architecture and Art Development Fund
Richard and Catherine Hinkle Koppe Scholarship Fund
Roland Rathbun Memorial Fund
John E. Walley Memorial Fund

College of Business Administration

Altschuler, Melvoin, and Glasser Scholarship. For students majoring in accounting. Recipients must show evidence of outstanding ability and potential. Personal financial need is not a factor, and there are no restrictions as to age, race, creed, color, sex, etc. The student should have two or three remaining terms before graduation. One annual scholarship; $300.

Chicago Perfumery, Soap and Extract Association, Inc. Scholarship. Recipients are selected on the basis of financial need and academic excellence. Preference is given to Chicago-area residents majoring in fields related to general business interests, excluding accounting; $900.

Ernst and Ernst Scholarship. For students majoring in accounting. Recipients must show evidence of outstanding ability and potential. Personal financial need is not a factor, and there are no restrictions as to age, race, creed, color, sex, etc. The student should have two or three remaining quarters before graduation. One annual scholarship; $500.

Winifred B. Geldard Award. For students majoring in economics. Selection is made by a committee of the Departments of Economics faculty on the basis of outstanding scholarship, ability, and potential; $400.

Goldberg, Geiser, Mader, and Egert Scholarship. For students majoring in accounting. Recipients must show evidence of outstanding ability and potential. Personal financial need is not a factor, and there are no restrictions as to age, race, creed, color, sex, etc.; $250.

Alexander Grant and Company Scholarship. For students majoring in accounting. Recipients must show evidence of outstanding ability and potential. Personal financial need is not a factor, and there are no restrictions as to age, race, creed, color, sex, etc. The student should have two or three remaining terms before graduation. One annual scholarship; $250.

Haskins and Sells Scholarship. For students majoring in accounting. Recipients must show evidence of outstanding ability and potential. Personal financial need is not a factor, and there are no restrictions as to age, race, creed, color, sex, etc. One annual scholarship; $300.

Laventhol Krekstein Horwath and Horwath Scholarship. For students majoring in accounting. Recipients must show evidence of outstanding ability and potential. Personal financial need is not a factor, and there are no restrictions as to age, race, creed, color, sex, etc. The student should have two or three remaining quarters before graduation. One annual scholarship; $300.

Peat, Marwick, Mitchell Foundation Scholarship. For students majoring in accounting. Recipients must show evidence of outstanding ability and potential. Personal financial need is not a factor, and there are no restrictions as to age, race, creed, color, sex, etc. One annual scholarship; $500.

Selig Stein Memorial Scholarship. Sponsored by S.D. Leidesdorf and Company. For students majoring in accounting. Recipients must show evidence of outstanding ability and potential. Personal financial need is not a factor, and there are no restrictrions as to age, race, creed, color, sex, etc. One annual scholarship; $500.

College of Engineering

Industrial Scholar Awards. Juniors and seniors with high scholastic achievement in the College of Engineering are eligible for fifteen to twenty annual scholarships of approximately $500 each. Personal financial need is not a factor. Contributors include GTE Automatic Electric Laboratories Inc., Bodine Electric Company, Motorola Inc., Universal Oil Company, and Zenith Radio Corporation.

Women's Auxiliary to the American Institute of Mining, Metallurgical and Petroleum Engineers Inc. The scholarship loan fund is designed to assist in the education of men and women undergraduate students studying for a degree in engineering in the metallurgy or chemistry fields. One annual scholarship.

Foundry Educational Foundation Scholarship. This scholarship is for students who have indicated a desire to enter the foundry industry, particularly those students who, on the basis of their academic record, seem to be potential leaders in the field. Personal financial need is not a factor. Three or four awards annually.

College of Health, Physical Education, and Recreation

The Division of Intercollegiate Athletics identifies and recommends individuals for grants-in-aid. This aid may consist of a tuition waiver or a cash grant covering the total educational expenses of the recipient. The awards, based on athletic proficiency, are given to both men and women competitors.

College of Liberal Arts and Sciences

Gordon Lee Goodman Award for Distinction in Undergraduate Studies in History. Friends and relatives of the late Gordon Lee Goodman, associate professor of history at the University of Illinois at Chicago Circle, have established a fund in his memory "to support excellence in the undergraduate program in history." Annually the Department of History at Chicago Circle designates at least one and not more than four Gordon Lee Goodman Scholars in History. The student must have attained or be about to attain senior standing, must be a major in history, and must have demonstrated excellent scholarship. Designation as a Gordon Lee Goodman Scholar in History carries a stipend that is paid from the income of the memorial fund. The Department of History maintains a permanent record of all Gordon Lee Goodman Scholars in History and identifies students so named in all appropriate University announcements and publications.

Raffeld Family Scholarship. Awarded annually to a student majoring in the Department of Speech and Theater; $200.

Talent Scholarships

Department of Music. A variable number of tuition waivers are granted annually to students demonstrating exceptional talent in music. Recipients are selected by the Department of Music, to which application should be made.

Department of Speech and Theater. A variable number of tuition waivers are granted annually to students demonstrating exceptional talent in various aspects of theater. Recipients are selected by the Department of Speech and Theater, to which application should be made.

Jane Addams School of Social Work

Patricia Ann Counce Memorial Scholarship. A grant, in the amount of tuition and fees, for a woman student of disadvantaged background who intends to enter the field of social work; up to $500.

Prizes and Recognition

College of Architecture and Art

AIA School Medal and Certificate of Merit. Awarded to a graduating student in architecture for scholastic achievement, character, leadership, and promise of high professional ability.

AIA Chicago Chapter Thesis Award. For excellence in a thesis project in architecture; $100.

Alpha Rho Chi Medal of Merit. Awarded to a graduating student in architecture for leadership, service, and promise of professional merit.

Architectural Secretaries Association Award for a thesis of outstanding quality; $250.

Basil T. Argeropolos Memorial Prize for excellence of performance by a student of painting.

Edward M. Cohon and Associates Prize. Awarded to a graduating student for outstanding scholarship in architectural structures; $100.

Department of Architecture Citations for distinguished work by students in the various curricula.

Department of Art Faculty Prizes for excellence of performance by students in various curricula.

Henry Dubin Memorial Award. Awarded to a graduating student for outstanding scholarship in architectural design; $100.

Richard Koppe Memorial Prize for excellence of performance by a student in the studio arts.

John Walley Memorial Prize for excellence of performance by a student in design.

Women's Architectural League, Franklin R. Smith Memorial Award. Awarded to a student of architecture for excellence in a thesis in planning; $100.

College of Business Administration

Alpha Kappa Psi Scholarship. A trophy is awarded annually to the student graduating from the College of Business Administration with the highest grade point average.

College of Engineering

Bell Honors Award. Each term, the graduating student who has attained the highest overall grade point average in the College of Engineering is cited for this award. In addition to receiving a certificate for attaining the highest scholastic standing in the college, the student rings the brass locomotive bell that was brought to Chicago on February 10, 1951, for the observance of the Illinois Central Railroad's 100th birthday; the bell was presented to the College of Engineering by the railroad.

College of Health, Physical Education, and Recreation

Awards for athletic performance and years of athletic participation are granted according to criteria determined by each individual sport. The first-year award is a sweater, followed by a jacket, a watch, and a graduation ring. All UICC athletes are eligible for these awards.

College of Liberal Arts and Sciences

Louis Pasteur Award. For excellence in biological sciences. This award is presented annually by the Honors Committee of the Department of Biological Sciences to a graduating senior who has demonstrated excellent scholarship in biology and outstanding initiative and creativity in the exploration of a specialized research problem.

Freud Award. The Freud Award is given to encourage a promising chemist. To be eligible, a student must be a major in a chemistry program and must have attained no more than junior standing. Further information may be obtained from the Department of Chemistry.

Ernst C. Van Keuren Award. For excellence in the humanities; presented annually by the Department of English to its outstanding graduating senior.

Professor Van Keuren was a member of the original professorial staff of the University of Illinois Undergraduate Division and Head of the Division of Humanities from 1947 until his death in 1953.

The following awards are presented annually to German majors who have achieved academic distinction within the Department of German: *Robert Bosch Award, Bazaar Fine Imports Award, Battenfeld Award, American Friends of Austria Award,* and *Columbia Club Award.*

Career Placement Services

Seniors and graduate students are entitled to assistance from Career Placement Services in determining vocational objectives, choosing careers, and finding permanent employment. Graduating seniors and graduate students are encouraged to register with Career Placement Services for aid in contacting employers and for planning and scheduling interviews with those business firms, government agencies, and nonprofit organizations whose representatives visit Chicago Circle during the four terms. Career Placement Services also serves prospective graduates by making available lists of employment opportunities and directories and by providing vocational counseling and assistance in communicating with potential employers. In addition, an up-to-date career library is maintained.

Seniors majoring in teacher education who will be graduated in March, June, or August should register with Placement Services during the fall term. December graduates should complete registration during the preceding summer term. In all cases, teacher education seniors should register before they begin student teaching.

All other seniors receive reminders of the availability of placement services by mail; however, any senior who will be granted a degree within *one year* may call 996-2300 or come to 4061 Behavioral Sciences Building for career information. Students should start career planning *early* in their last year, inasmuch as the bulk of on-campus recruiting is usually completed before Easter.

The aims of Career Placement Services are (1) to assist University graduates in making wise and responsible career choices, (2) to eliminate wasteful turnover, and (3) to assist graduates in achieving the most fruitful long-term investment of their talents for themselves, for their employers, and for society.

Veterans Affairs

The Office of Veterans Affairs, 809 University Hall, Ext. 5141, provides counseling and direct assistance in matters relating to federal and state benefit programs, employment, housing, tutoring, and financial assistance to all veterans, including the special provisions for Vietnam era and Vietnam veterans.

Foreign Student Affairs

The Office of Foreign Student Affairs, 808 University Hall, Ext. 3121, is a catalyst for cross-cultural communication, assisting persons of foreign

backgrounds to relate to the University and to become involved with American life. This service includes help with various immigration problems and counseling in English as a foreign language, program planning, financial aid, and housing.

Organizations and Activities

The Office of Organizations and Activities, 712 Chicago Circle Center, Ext. 4500, advises more than 190 registered student organizations. It provides assistance in the organization and registration of organizations and in establishing their structure, financial operations, space reservations, event planning, record keeping, and publicity. Students who wish to join any of the various organizations may find information on the purpose, activities, and membership requirements and the persons to consult in the Office of Organizations and Activities. Students who wish to form new organizations are assisted by the office staff.

College of Architecture and Art

Alfred P. Maurice, MA (Art), Acting Dean of the College
Keith Morrison, MFA, Associate Dean
Raymond Dalton, MS, Assistant Dean
Ann Goodfellow, MA, Assistant Dean

The College of Architecture and Art offers curricula for professional practice in architecture, art and design, and the history of architecture and art. In the fields of architecture and art, the major emphases are on creative processes and studio work with a variety of supportive lectures and seminar programs. In the history of architecture and art, the emphasis is a scholarly study of the arts of the past; lectures, seminars, and independent research are conducted on campus and in museums and libraries throughout the Chicago area.

Instruction in the college is enriched by a faculty of practicing architects, artists, designers, and art historians. This faculty adds dimensions of professional experience, current issues, and recent research to the traditional concepts of architecture and art.

All work submitted by students for credit in any course in the college belongs to the Board of Trustees of the University of Illinois, and the University reserves the right to retain, copyright, use, exhibit, reproduce, and publish any work so submitted.

Rules of the College

Minimum Requirements

Minimum requirements for the College of Architecture and Art are the same as those of the University; see *Graduation Requirements and Academic Regulations.*

Full-Time Program

During the fall, winter, and spring quarters, a full-time program is from 12 to 20 hours. Above 20 quarter hours is considered an overload and must be recommended by an adviser and approved in the dean's office. During an eight-week summer session a full-time program is 8 quarter hours, and a program of more than 12 hours must be approved.

Graduation Declaration

Each student must arrange an appointment with the admissions officer of the college at least two terms before the one in which graduation is expected.

Probation and Drops

Since the probationary status is determined by letter grades earned at the end of any term, an Incomplete does not exempt a student from probationary regulations.

A student whose term grade point average or University of Illinois cumulative grade point average is below 3.00 is placed on probation and advised to enroll for a minumum of 12 quarter hours of credit (full time) for the next term in residence.

A student on probation who earns a 3.00 grade point average at the end of any term but still has a University of Illinois cumulative average below 3.00 is placed on terminal probation.

A student on any academic probation for two consecutive terms may not re-enroll. Thus, a student on probation who fails to earn a 3.00 term grade point average at the end of any term is dropped and a student who fails to achieve a University of Illinois cumulative grade point average of 3.00 after two consecutive terms on any academic probation is dropped.

A student who fails to earn at least four hours of credit and whose term grade point average is 1.00 at the end of any term is dropped.

Architecture

Professors: Richard R. Whitaker, Jr., BArch, Head of the Department; Rene Amon, PhD; Felix Candela, *Arquitecto*; Leonard J. Currie, MArch; Edward L. Deam, MArch; Charles B. Genther, BS; Robert W. Gerstner, PhD; George A. Hinds, MCP; R. Thomas Jaeger, MArch; Harold B. McEldowney, BA (Emeritus); John Macsai, BArch; George J. Megarefs, PhD; Henry L. Mikolajczyk, MArch; Lawrence Perkins, BArch (Adjunct); Frederick P. Wiesinger, PhD.

Associate Professors: Anthony J. DeFilipps, BS; Elliott E. Dudnik, MS; Michael S. Gelick, MArch; Kenneth D. Isaacs, MFA; Hinman L.P. Kealy, MCP; Phillip A. Kupritz, MArch; Louis Rocah, MS; Roger G. Whitmer, MS.

Assistant Professors: Bruno Ast, MArch; Lloyd Gadau, BArch; Jon L. Liljequist, JD; Kenneth Schroeder, MArch.

Lecturers: Leonard Bihler, BSME; James Caron, MBA; Stuart Cohen, MArch; Richard Fogelson, MArch; Ezra Gordon, BS; Edward Hoffman, BSCE; Eugene Holland, BSCE; Judith McCandless, MCRP; Louis Narcisi, MArch; Peter Pran, MS; Peter Roesch, MArch; Donald Smith; Thomas Welch, MArch.

Architecture is the art and science of creating the built environment. The program in the Department of Architecture is aimed at developing an understanding of the forces that influence and control the environment and the processes for deriving form in response to human needs, activities, and aspirations. The emphasis is on designing physical places to accommodate people and their activities appropriately; understanding the relationship between individual buildings and the context of the city; the analysis of the political, social, and economic factors relating to the urban environment, using metropolitan Chicago as a laboratory; and the exploration and development of the science of building and building systems related to the natural and physical forces that act on and interact with the built environment.

The curriculum is organized to respond to the interests and needs of the individual student and the varied opportunities and needs of the architectural and building professions. While many students are preparing for a professional career in architecture, others pursue careers in government agencies, development corporations, and product manufacturers as well as in the construction industry.

The program combines the exploration and development in depth of the skills and knowledge of architecture with the breadth of a humanistic education in the arts and sciences. The curriculum in architecture requires 252-259 quarter hours for graduation, exclusive of military training and formerly required physical education. See *Requirements for Admission to Undergraduate Study* for the admission requirements of the department. Upon completion of the curriculum, the candidate is eligible for recommendation for the professional degree of Bachelor of Architecture in one of the following areas: architectural humanities, building technology, design, or structures.

Year Abroad

The department, in cooperation with the Department of Architecture in Urbana-Champaign and the Unite Pedagogique No. 3, offers a study abroad program. Home base is Versailles, France. Course work parallels offerings in Chicago and Urbana while emphasizing the culture, landmarks, ambience, and opportunities of Europe. Formal course work is enriched by guided or informal field study and trips.

Community College Transfer

Students in a community college who intend to transfer to the Department of Architecture at Chicago Circle are urged to take the community college equivalent of the following Chicago Circle courses:

Mathematics 130, 131, 132 (for structures and building technology majors), 194
English Composition 101, 102
Sociology 100 and 276 or 271
History of Architecture and Art 142, 143, 144, 231-238
Physics 101
Natural sciences electives (8 quarter hours of laboratory science)
Physical education (6 quarter hours or 6 hours of other college-level courses)

Art electives (8 quarter hours)
Social sciences or humanities electives (16 quarter hours)

Curriculum in Architecture

The program is under review and is subject to change. Students applying for admission should consult the department for details, and for appropriate quarter for application. In addition to the courses listed below, 6 hours of physical education (or 6 hours of other college-level courses) are required for graduation.

First Year

First Quarter	*Hours*
Architecture and Art 101—Basic Design I	3
Architecture and Art 111—Visual Communications I	2
Architecture and Art 141—Man and Environment	3
Mathematics 130—Calculus and Analytic Geometry I	5
English Composition 101	4
	17

Second Quarter	
Architecture and Art 102—Basic Design II	3
Architecture and Art 112—Visual Communications II	2
History of Architecture and Art 142—History of Architecture and Art I	4
Mathematics 131—Calculus and Analytic Geometry II	5
English Composition 102	4
	18

Third Quarter	
Architecture and Art 103—Basic Design III	3
Architecture and Art 113—Visual Communications III	2
History of Architecture and Art 143—History of Architecture and Art II	4
Mathematics 194[1]—Introduction to Automatic Digital Computing	3-5
Sociology 100—Introduction to Sociology	4
	16-18

Second Year

First Quarter	*Hours*
Architecture and Art 104—Basic Design IV	3
Architecture and Art 114—Visual Communications IV	2
Architecture 121—Statics and Strength of Materials I	3
History of Architecture and Art 144—History of Architecture and Art III	4
Physics 101—General Physics: Mechanics and Heat	5
	17

Second Quarter	
Architecture 101—Architectural Design I	6
Architecture 122—Statics and Strength of Materials II	3
Elective from History of Architecture and Art 231 through 238	4
Physics 102—General Physics: Electricity, Magnetism, and Waves	5
	18

1. Required for all students who elect a design or humanities major. Structures and building technology majors must substitute Mathematics 132 and take Mathematics 195 during their third year.

Third Quarter

Architecture 102—Architectural Design II	6
Architecture 111—Building Technology I	4
Architecture 123—Statics and Strength of Materials III	3
Physical sciences elective	4
	17

Third Year

First Quarter

	Hours
Architecture 201—Architectural Design III	6
Architecture 211—Building Technology II	4
Architecture 221—Structural Engineering I	3
Sociology 276—Sociology of Urban Life in Industrial Society	4
	17

Second Quarter

Architecture 202—Architectural Design IV	6
Architecture 212—Building Technology III	4
Architecture 222—Structural Engineering II	3
Social sciences or humanities elective	4
	17

Third Quarter

Architecture 213—Building Technology IV	4
Architecture 223—Structural Engineering III	3
Architecture 241—Urban and Regional Planning I	4
Art electives [2]	4
	15

Fourth Year

First Quarter

	Hours
Architecture 203—Architectural Design V	6
Architecture 214—Building Technology V	4
Architecture 224—Structural Engineering IV	3
Architecture 242—Urban and Regional Planning II	4
	17

Second Quarter

Architecture 204—Architectural Design VI	6
Architecture 215—Building Technology VI	4
Architecture 225—Structural Engineering V	3
Elective from History of Architecture and Art 231 through 238	4
	17

Third Quarter

Architecture 226—Structural Engineering VI[3]	3
Art electives	4
Elective from History of Architecture and Art 231 through 238	4
Social sciences or humanities elective	4
	15

2. Structures and building technology majors must also take Mathematics 195 for 3 credit hours.

3. Comprehensive project for non-structures majors; structures majors must substitute Mathematics 220—Elementary Differential Equations.

Fifth Year

Design Option

First Quarter	*Hours*
Architecture 301—Architectural Design VII	6
Architectural technology elective[4]	3
Elective from History of Architecture and Art 231 through 238	4
Social sciences or humanities elective	4
	17

Second Quarter	
Architecture 309—Architectural Design Thesis	6
Architectural technology elective[4]	3
Architecture 343—Professional Practice	3
Social sciences or humanities elective	4
	16

Third Quarter	
Architecture 309—Architectural Design Thesis	12
Architectural technology elective[4]	3
	15

Technology Option

First Quarter	*Hours*
Architecture 313—Building Construction Systems	6
Architectural technology electives[4]	6
Social sciences or humanities elective	4
	16

Second Quarter	
Architecture 316—Environmental Controls Systems	6
Architectural technology electives[4]	6
Architecture 343—Professional Practice	3
	15

Third Quarter	
Architecture 319—Building Technology Thesis	12
Social sciences or humanities elective	4
	16

Structures Option

First Quarter	*Hours*
Architecture 322—Structural Seminar I	3
Architecture 323—Intermediate Structural Analysis	6
Social sciences or humanities elective	4
	13

4. Architecture 311, 312, 314, 315.

Second Quarter

Architecture 325—Structural Seminar II	3
Architecture 326—Intermediate Structural Design	6
Social sciences or humanities elective	4
Architecture 343—Professional Practice	3
	16

Third Quarter

Architecture 329—Structural Thesis	12
	12

Humanities Option

First Quarter	*Hours*
Architectural technology elective[4]	6 or 3
Elective from History of Architecture and Art 231-238	4
Social sciences or humanities elective or Sociology 371	4
Architecture 331 or History of Architecture and Art 331—Seminar	3 or 4
Architecture 332 or History of Architecture and Art 332—Reading Course	3 or 4
	17-19

Second Quarter

Architectural technology elective[4]	6 or 3
Elective from History of Architecture and Art 231-238	4 or 8
Social sciences or humanities elective or Sociology 373	4
Architecture 343—Professional Practice	3
	17-18

Third Quarter

History of Architecture and Art 333—Literature, Theory, and Criticism	4
Architecture 339—Architectural Humanities Thesis	12
	16

Notes: General Education: A minimum of 9 hours in the social sciences and 9 hours in the humanities is required of all degree candidates.
Courses in the College of Engineering can be substituted for equivalent structures courses in the Department of Architecture with the consent of the Department of Architecture.

4. Architecture 311, 312, 314, 315.

Courses

Architecture (Arch)

101. ARCHITECTURAL DESIGN I. 6 HOURS. Problems; emphasis on the development and organization of space. Prerequisite: A&A 104.

102. ARCHITECTURAL DESIGN II. 6 HOURS. Problems; emphasis on structure. Prerequisite: Arch 101.

111. BUILDING TECHNOLOGY I. 4 HOURS. Introduction to building technology, building material properties, manufacturing processes, and construction techniques. Wood and masonry systems and allied materials. Prerequisite: Concurrent registration in Arch 102.

121. STATICS AND STRENGTH OF MATERIALS I. 3 HOURS. Equilibrium of bodies and systems subjected to parallel, colinear, parallel noncolinear, perpendicular, and general systems of concentrated forces. Distributed bonds, centroids, buoyancy, friction. Prerequisite: Math 131.

122. STATICS AND STRENGTH OF MATERIALS II. 3 HOURS. Stresses and strains in tension and compression; moment of inertia, torsion, bending; shear and moment diagrams; stresses in beam; combined bending and aerial load. Prerequisite: Arch 121.

123. STATICS AND STRENGTH OF MATERIALS III. 3 HOURS. Deflection of beams; statical indeterminancy; columns variation of stress and strain at a point; ultimate load, failure and safety. Prerequisite: Arch 122.

199. INDIVIDUAL STUDY: SPECIAL TOPICS I. 1 TO 6 HOURS. May be repeated for credit for a maximum of 18 hours. Selected topics for individual investigation. Prerequisite: Consent of the instructor.

200. COMMUNICATION SKILLS. 5 HOURS. Nonverbal communications of simple and complex ideas and concepts of the structure and systems of manmade environment. Prerequisite: Junior standing—architecture students only.

201. ARCHITECTURAL DESIGN III. 6 HOURS. Problems; emphasis on building construction systems. Prerequisites: Arch 102 and completion of the second-year program in architecture.

202. ARCHITECTURAL DESIGN IV. 6 HOURS. Comprehensive design problems incorporating site planning. Prerequisite: Arch 201.

203. ARCHITECTURAL DESIGN V. 6 HOURS. Comprehensive problems. Prerequisite: Arch 202.

204. ARCHITECTURAL DESIGN VI. 6 HOURS. Comprehensive problems. Prerequisite: Arch 203.

211. BUILDING TECHNOLOGY II. 4 HOURS. Introduction to the industrial process and the use of manufactured building materials. Steel building systems and allied materials. Prerequisite: Arch 111.

212. BUILDING TECHNOLOGY III. 4 HOURS. Introduction to on-site manufacture of building components and elements. Concrete building systems and allied materials. Prerequisite: Arch 211.

213. ENVIRONMENTAL CONTROL TECHNOLOGY I. 4 HOURS. Basic phenomena of light, sound, and electricity in relation to human needs. Illumination, acoustic control, and electrical service systems; their relation to other building systems and elements. Prerequisite: Arch 212.

214. ENVIRONMENTAL CONTROL TECHNOLOGY II. 4 HOURS. Criteria for human comfort in the environment. Relationships and effects of building design, climatic conditions, and occupancy on heating, ventilating, air-conditioning systems. Survey of alternative HVAC systems, fire protection, and basic water/waste systems. Prerequisite: Arch 213.

215. BUILDING TECHNOLOGY IV. 4 HOURS. Comprehensive architectural problems; development of construction/contract documents. Integration of building elements and environmental control systems. Prerequisite: Arch 214.

221. STRUCTURAL ENGINEERING I. 3 HOURS. Loads on buildings. Algebraic and graphical analysis of beams and trusses. Sloping beams. Statically determinate space structures. Cable systems. Prerequisite: Arch 123.

222. STRUCTURAL ENGINEERING II. 3 HOURS. Approximate analysis of frames. Moment distribution method. Energy principles. Model analysis. Prerequisite: Arch 221.

223. STRUCTURAL ENGINEERING III. 3 HOURS. Steel structures; properties of steel, design of tension members; columns; beams and connections. Design of steel buildings; roof trusses and rigid frames. Prerequisite: Arch 221.

224. STRUCTURAL ENGINEERING IV. 3 HOURS. Concrete structures; properties of concrete and steel; design of columns, beams, slabs, two-way slabs, flat slabs, walls, and foundations. Prerequisite: Arch 221.

225. STRUCTURAL ENGINEERING V. 3 HOURS. Foundation types and design. Design of masonry and timber structures. Prerequisite: Arch 221.

226. STRUCTURAL ENGINEERING VI. 3 HOURS. General problems in the selection and design of structural systems for buildings; structural design with aluminum, plastics, and other materials; elements of prestressed concrete; ultimate and plastic design; unconventional structural types. Prerequisites: Arch 222, 223, 224, 225.

299. INDIVIDUAL STUDY: SPECIAL TOPICS II. 1 TO 6 HOURS. May be repeated for credit for a maximum of 18 hours. Selected topics for individual investigation. Prerequisite: Consent of the instructor.

301. ARCHITECTURAL DESIGN VII. 6 HOURS. Comprehensive problems. Prerequisites: Arch 204 and completion of the fourth-year program in architecture.

302. ARCHITECTURAL DESIGN VIII. 6 HOURS. Comprehensive problems. Prerequisite: Arch 301.

309. ARCHITECTURAL DESIGN THESIS. 6, 9, OR 12 HOURS. May be repeated for a total of 18 hours. Individual problems. Prerequisite: Arch 301.

311. FORENSIC ARCHITECTURE. 3 HOURS. Legal problems in architecture. Prerequisite: Fifth-year standing.

312. COMPUTER APPLICATIONS IN ARCHITECTURE. 3 HOURS. Computer methods and techniques in architectural design, construction, engineering, and urban planning. Prerequisite: Math 194 or 195.

313. BUILDING CONSTRUCTION SYSTEMS I. 6 HOURS. Static and dynamic environmental control systems. Prerequisites: Arch 204, 215, and completion of the fourth-year program in architecture.

314. INDUSTRIALIZED BUILDING. 3 HOURS. Industrialized and prefabricated building systems: materials, production techniques, transportation, and assembly methods. Prerequisite: Fifth-year standing or consent of the instructor.

315. LOGISTICS OF BUILDING CONSTRUCTION AND PROJECT MANAGEMENT. 3 HOURS. Job scheduling and project control. Construction process simulation, actual site logistics, and productivity. Prerequisite: Fifth-year standing or consent of the instructor.

316. BUILDING CONSTRUCTION SYSTEMS II. 6 HOURS. Illumination, heating, and air-conditioning systems, acoustics; problems of interrelationships with other disciplines and the building industry. Prerequisite: Arch 313.

319. BUILDING TECHNOLOGY THESIS. 6, 9, OR 12 HOURS. May be repeated for a total of 18 hours. Individual problems. Prerequisite: Arch 313.

321. FOUNDATIONS. 3 HOURS. Elements of soil mechanics; the selection and design of pile, caisson, raft, and other foundations. Prerequisite: Arch 226.

322. STRUCTURAL SEMINAR I. 3 HOURS. May be repeated for credit. Selected topics in structural analysis and design. Prerequisites: Completion of 200-level structural engineering courses, Math 220, and the fourth-year program in architecture.

323. INTERMEDIATE STRUCTURAL ANALYSIS. 6 HOURS. Analysis of statically indeterminate coplanar and space structures. Prerequisites: Completion of 200-level structural engineering courses, Math 220, and the fourth-year program in architecture.

324. BUILDING DYNAMICS. 3 HOURS. Newton's laws. Rectilinear motion. Rectilinear vibrations of one degree of freedom. Wind and earthquake effects on buildings, design codes, and practices. Prerequisite: Completion of 200-level structures courses.

325. STRUCTURAL SEMINAR II. 3 HOURS. May be repeated for a total of 9 hours of credit. Selected topics in structural analysis and design. Prerequisites: Arch 225, Math 220.

326. INTERMEDIATE STRUCTURAL DESIGN I. 3 HOURS. Plastic and limit methods of design; ultimate strength design. Prerequisite: Arch 323.

327. INTERMEDIATE STRUCTURAL DESIGN II. 3 HOURS. Design of prestressed concrete members and structures. Prerequisite: Arch 323.

329. STRUCTURAL RESEARCH PROJECT. 12 HOURS. A topic is selected to show the degree to which a student has assimilated and unified the course material taken thus far. This topic must also require additional individual learning in selected fields. Prerequisites: Arch 322, 326.

331. ARCHITECTURE SEMINAR. 1 TO 5 HOURS. May be repeated for a total of 15 hours. Current problems. Prerequisite: Fourth-year standing.

332. ARCHITECURE READING COURSE. 1 TO 5 HOURS. May be repeated for a total of 15 hours. Individually planned readings on selected topics under the supervision of a faculty member. Prior to registration the student should be advised by the instructor. Prerequisite: Fourth-year standing.

339. ARCHITECTURAL HUMANITIES THESIS. 12 HOURS. Individual problems. Prerequisite: 21 hours of the history of architecture.

343. PROFESSIONAL PRACTICE. 3 HOURS. Problems related to the practice of architecture. Prerequisite: Fifth-year standing.

373. ECOLOGICAL BASIS OF PLANNING I. 4 HOURS. Physical and biological systems and their relationship to physical planning at various scales. Prerequisite: Third-year standing in the College of Architecture and Art or consent of the instructor.

374. ECOLOGICAL BASIS OF PLANNING II. 4 HOURS. Environmental impact of physical design. Environmental analysis, preservation, and controls. Landscape development. Prerequisite: Arch 373.

381. URBAN AND REGIONAL PLANNING I. 4 HOURS. Urban development from prehistory to 1900. The form and order of cities and their evolution. Interrelationship of physical, social, political, and cultural elements. Prerequisite: 8 hours of social sciences.

382. URBAN AND REGIONAL PLANNING II. 4 HOURS. Urban design in the twentieth century. Design theory and planning related to the built environment. Order and form of the city. Interrelationship of physical, social, political, and cultural elements. Prerequisite: 8 hours of social sciences.

399. INDIVIDUAL STUDY: SPECIAL TOPICS III. 1 TO 6 HOURS. May be repeated for credit for a maximum of 18 hours. Selected topics for individual investigation. Prerequisite: Consent of the instructor.

Architecture and Art (A&A)

Architecture and Art courses, with the exception of Architecture and Art 141, are open only to architecture students and registration, except for 141, requires the approval of the department.

101. BASIC DESIGN I. 3 HOURS. The basic factors in two-dimensional and three-dimensional design. Students must register concurrently in Architecture and Art 111. Exceptions to this must be approved by the head of the department.

102. BASIC DESIGN II. 3 HOURS. More complex systems of two-dimensional and three-dimensional design. Introduction to color theory. Prerequisite: A&A 101.

103. BASIC DESIGN III. 3 HOURS. Theory and application; form and structure; three-dimensional models of systems. Prerequisite: A&A 102.

104. BASIC DESIGN IV. 3 HOURS. Form-movement-light-time in the form of machines or sculpture. Prerequisites: A&A 103 and Math 130 or approval of the department.

111. VISUAL COMMUNICATIONS I. 2 HOURS. Introduction to the techniques. Students must register concurrently in Architecture and Art 101. Exceptions to this must be approved by the head of the department.

112. VISUAL COMMUNICATIONS II. 2 HOURS. Continues Architecture and Art 111. Prerequisite: A&A 111.

113. VISUAL COMMUNICATIONS III. 2 HOURS. Symbolic systems, image forming, and typography. Prerequisite: A&A 112.

114. VISUAL COMMUNICATIONS IV. 2 HOURS. Experimentation with the techniques and materials, including photography, used in two-dimensional expression. Prerequisites: A&A 113 and Math 130 or approval of the department.

141. MAN AND ENVIRONMENT. 3 HOURS. Introduction to the nature of the professions of architecture and art in terms of the subjective and objective factors of architectural activity.

Art

Professors: Edward Colker, BS, Head of the Department; Morris Barazani; Nancy D. Berryman, EdD; Roland F. Ginzel, MFA; Martin R. Hurtig, MS; Alfred P. Maurice, MA; Robert W. Nickle, BA; Simon Steiner, MS; John F. Richardson, MA (Emeritus).

Associate Professors: Leon Bellin, MA; Wayne A. Boyer, MS; Edward E. Burr, BFA (Emeritus); Eugene Dana, MDes; Donald P. Dimmitt, BS; Klindt B. Houlberg, MA; Joseph D. Jachna, MS; Jerald W. Jackard, MA; Keith A. Morrison, MFA; Lawrence Salomon, BFA; Daniel Sandin, MS; Hans K. Schaal, MS; Irene Siegel, MS; Nancy R. Stableford, MFA; Charles Wilson, MFA.

Assistant Professors: William S. Becker, MFA; Suzanne R. Cohan, MAE; Raymond A. Dalton, MS; Dennis A. Kowalski, MFA; Earnest McBurrows, MFA; Hugo W. McCauley, MS; John H. Pacyna, MFA; Esther Parada, MFA; Robert W. Stiegler, BS; Guenther Tetz, MFA.

Lecturers: Maureen Felix-Williams, MA; John Greiner; Paul Kondor, MS; James Minnick, BFA.

Artists provide insights into the meaning for events and give form to the objects that compose our physical environment. To do this, they must be familiar with the ideas and dilemmas of their time and must be capable of using the skills that are necessary to make creative statements.

The program of the Department of Art is designed to stimulate the student's creative activity, to heighten intellectual capabilities, and to develop the essentials of expression to act effectively in a dynamic society.

For the Bachelor of Arts, 194 quarter hours are required.

Degree Requirements

I. Foundation Program (28 quarter hours)

Required of all entering freshmen. Appropriate placement in the program is made for transfer students who have less than 24 quarter hours or 16 semester hours of work in two- and three-dimensional basic design courses.

Freshmen are not admitted to the Department of Art in the winter quarter.

First Quarter	*Hours*
Art-Design 100—Man and Environment	4
Art-Design 101—Explorations in Three Dimensions	4
Art-Design 111—Explorations in Two Dimensions	4
Second Quarter	
Art-Design 102—Visual Concepts: Three-Dimensional	4
Art-Design 112—Visual Concepts: Two-Dimensional	4

Third Quarter

Art-Design 103—Light Documents	4
Art-Design 113—Signs, Symbols, Images	4
	28

Foundation Program for Transfer Students

Students must have at least 16 quarter hours or 12 semester hours of two- and three-dimensional basic design courses.

This program is offered only in fall and spring quarters.

Art-Design 100—Man and Environment	4
Art-Design 200—Three-Dimensional Orientation	4
Art-Design 201—Two-Dimensional Orientation	4
	12

II. General Education (70 quarter hours)

Required of all students, except art education majors.

		Hours
English Composition 101, 102		8
Courses in the humanities[5]	Minimum of	9
Courses in the physical and natural sciences or mathematics	Minimum of	9
Courses in the social sciences	Minimum of	9
General education electives outside of the College of Architecture and Art (may include physical education)		35
		70

General education courses for art education majors.

English Composition 101, 102	8
Speech 100, 101	5
Psychology 100	4
Political Science 151	4
Social sciences elective	4
Physical or natural sciences elective	9
Humanities[5] (History of Architecture and Art 142, 143, 144 are required and may also count as college electives)	(12)
General education electives outside of the College of Architecture and Art	12
	58

Physical Education—Although physical education is no longer required for graduation, the State Certification Board requires that prospective teachers present 4½ quarter hours of physical education or health science credit. Consult the College of Health, Physical Education, and Recreation for suggested courses to meet this requirement.

5. Up to 12 quarter hours may be taken in the history of architecture and art to fulfill the humanities requirement.

Professional courses for art education majors.

Education 170, 210, 230 or 235, 250	16
Education 270, 271 (Same as Art-Design 284, 285)	16
	32

III. The Major

Design Curriculum—Communications design, industrial design, photo-film design (96 quarter hours)

A student may specialize in one of the design majors above.

48 quarter hours in the major[6]
28 quarter hours in courses related to the major as determined by the student's adviser
20 quarter hours of elective courses in the College of Architecture and Art

Plastic and Graphic Arts Curriculum—Painting, printmaking, sculpture (96 quarter hours)

A student may specialize in one of the plastic and graphic arts majors above.

48 quarter hours in the major[6]
28 quarter hours in courses related to the major as determined by the student's adviser
20 quarter hours of elective courses in the College of Architecture and Art

Comprehensive Curriculum—Emphasis on combining either design courses and/or plastic and graphic arts courses (96 quarter hours). A minimum of 48 quarter hours must be from either design or plastic and graphic arts.

76 quarter hours of design and/or plastic and graphic arts courses[6]
20 quarter hours of elective courses in the College of Architecture and Art

Art Education Curriculum (83 quarter hours)

63 quarter hours of course work in design and plastic and graphics art; breadth is suggested. Students must include Art-Design 281 and Art-Design 282;[6] Art-Design 283 is recommended.
20 quarter hours of elective courses in the College of Architecture and Art

6. Must include 12 quarter hours of 300-level course work.

Courses

Art (Art)

100. ART TODAY. 4 HOURS. Open to all students. Architecture, painting, sculpture, film-photo, television, mass media, and related areas; the forces that generated the new visual experience.

101. THE FILM AS A VISUAL ART. 4 HOURS. Open to all students. Growth and development of the film as an art form from the silent film to the present. The effect of film on visual attitudes and its relationship to other visual media, such as painting, communications design, and television.

102. PRINCIPLES OF ART. 4 HOURS. Open to all students. Introduction to the principles and techniques of two- and three-dimensional organization.

103. ART IN A TECHNOLOGICAL SOCIETY. 4 HOURS. Open to all students. The influence of technology on art and the impact of the resultant forms on society.

104. PAINTING TECHNIQUES I. 4 HOURS. Open to all students. Introduction; emphasis on formal study from visual experience in conjunction with investigation of methods and materials.

105. DRAWING TECHNIQUES. 4 HOURS. Open to all students. Introduction to the fundamentals.

106. ARTS OF THE NATIVE AMERICAN. 4 HOURS. Same as Native American Studies 106. Open to all students. Stages of cultural development involving mythology, religion, ritual, dance, prose, and poetry from the past to the present. Projects and lecture.

109. PAINTING TECHNIQUES II. 4 HOURS. Figurative and nonfigurative painting; synthesis of these methods for the purpose of personal expression. Prerequisite: Art 104 or consent of the instructor.

200. PHOTOGRAPHY. 4 HOURS. Open to all students. Lectures and demonstrations of the practical aspects and theoretical foundations.

201. FILM AND REALITY. 4 HOURS. Open to all students. Lectures and demonstrations of the techniques, traditions, and problems of the visual communication of fact through the medium of film.

203. PRINTMAKING. 4 HOURS. Open to all students. Past and present activity and future possibilities. Printmaking as a philosophical, social, and political force. Orientation to the techniques of stencil, relief, planographic, and intaglio processes.

204. ART FOR ELEMENTARY TEACHERS: STUDIES IN CREATIVITY. 4 HOURS. For elementary education majors. The creative process. Prerequisites: Junior standing and Ed 170.

205. DRAWING. 4 HOURS. Intermediate techniques and experience for the general student. Prerequisite: Art 105.

206. CERAMICS I. 4 HOURS. Same as Art-Design 246. Basic techniques in clay forming processes; hand and potter's wheel. Prerequisite: Sophomore standing.

207. CERAMICS II. 4 HOURS. Same as Art-Design 247. More advanced techniques in clay forming; basic glaze formulation and firing techniques. Prerequisite: Art 206.

208. METHODS AND TECHNIQUES OF NATIVE AMERICAN ARTS AND CRAFTS. 4 HOURS. Same as Native American Studies 208. Native arts and crafts, including beadwork, metal work, fingerweaving, and quill work.

Art-Design (AD)

100. MAN AND ENVIRONMENT. 4 HOURS. Introduction to the department program and to the nature of the professions of art and design. Prerequisite: Credit or concurrent registration in AD 101 and 111 or AD 200 and 201.

101. THREE-DIMENSIONAL EXPLORATIONS. 4 HOURS. Introduction to divergent methods of media exploration and resulting formal synthesis, using a broad range of three-dimensional related materials and basic hand power tools. Prerequisite: Concurrent registration in AD 111.

102. VISUAL CONCEPTS: THREE-DIMENSIONAL. 4 HOURS. Introduction to convergent methods of visual problem-solving and related organizational systems and design principles, using a variety of three-dimensional related materials with basic hand and power tools. Prerequisites: AD 101 and concurrent registration in AD 112.

103. LIGHT DOCUMENTS. 4 HOURS. Introduction to the characteristics of light and movement as they relate to environmental effects and photo-sensitive materials. Prerequisites: AD 102 and concurrent registration in AD 113.

111. TWO-DIMENSIONAL EXPLORATIONS. 4 HOURS. Introduction to divergent methods of media exploration and resulting formal synthesis, using a broad range of two-dimensional related materials and tools. Prerequisite: Concurrent registration in AD 101.

112. VISUAL CONCEPTS: TWO-DIMENSIONAL. 4 HOURS. Introduction to convergent methods of visual problem-solving and related organizational systems and design principles, using a variety of two-dimensional related materials and tools. Prerequisites: AD 111 and concurrent registration in AD 102.

113. SIGNS, SYMBOLS, IMAGES. 4 HOURS. Introduction to the continuing evolution of visual signs, images, and symbol systems; processes used in generating them with a variety of expressive media. Prerequisites: AD 112 and concurrent registration in AD 103.

200. THREE-DIMENSIONAL ORIENTATION. 4 HOURS. Open only to transfer students with art credit. Concepts and exercises adapted to the individual needs of art transfer students. Individualized evaluation and advising. Prerequisite: Approval of the department.

201. TWO-DIMENSIONAL ORIENTATION. 4 HOURS. Open only to transfer students with art credit. Concepts and exercises adapted to the individual needs of art transfer students. Individualized evaluation and advising. Prerequisite: Approval of the department.

202. BASIC DRAWING. 4 HOURS. Introduction to drawing materials, concepts, and techniques. Prerequisite: Completion of the foundation program.

203. DRAWING. 4 HOURS. Intensive study of the human figure through an exploration of a variety of media. Prerequisite: AD 202.

204. ADVANCED DRAWING. 4 HOURS. Continuation and elaboration of drawing techniques, with emphasis on individual exploration of techniques and imaginative concepts. Prerequisite: AD 203.

205. INTRODUCTION TO DESIGN METHODS. 4 HOURS. Systematic methods for industrial and communications designers. Design morphology, problem-solving, analysis, synthesis, and evaluation techniques. Prerequisite: At least 12 hours in either the AD 210 or 220 sequences or the equivalent.

208. ELECTRONIC ART-DESIGN. 4 HOURS. May be repeated twice for credit. A practical laboratory exploration into electronic sensors, processors, and affectors as applied to art and design processes. Prerequisite: Significant involvement in a related area or completion of the foundation program.

209. COLOR-PIGMENT AND LIGHT. 4 HOURS. Color: effects of visual radiant energy through pigments on two- and three-dimensional surfaces; color as physiological and psychological phenomena. Prerequisite: Completion of the first-year foundation program.

210. COMMUNICATIONS DESIGN. 4 HOURS. Introduction to the social and cultural aspects of visual communications as they affect the individual. Prerequisites: Completion of the foundation program and approval of the department.

211. COMMUNICATIONS DESIGN I. 4 HOURS. Theory and application of the elements of communications design through experiments with image, letter, form, and illustration. Prerequisite: AD 210.

212. COMMUNICATIONS DESIGN II. 4 HOURS. Inventive exploration of applications of illustrative techniques combining word and image, collage, and imprinting. Prerequisite: AD 211.

213. COMMUNICATIONS DESIGN III. 4 HOURS. Free and controlled manipulation of symbol, type, drawing, and photo-image from the two-dimensional plane to volume. Prerequisite: AD 212.

214. COMMUNICATIONS DESIGN IV. 4 HOURS. Comprehensive investigation of the elements and interrelations of communications design, demonstrated by research and analysis. Prerequisite: AD 213.

215. COMMUNICATIONS DESIGN V. 4 HOURS. Theory and application of the elements of typography. Prerequisite: AD 214.

218. ILLUSTRATION. 4 HOURS. The traditions and major directions of contemporary illustration in advertising, editorial, book, and exhibition design.

219. TYPOGRAPHY. 4 HOURS. Laboratory practice in mechanics, esthetics, and technology. Prerequisite: AD 210 or consent of the instructor.

220. INTRODUCTION TO INDUSTRIAL DESIGN. 4 HOURS. Introduction to the profession. Fundamental concepts of design; individualized projects based on personal use and anthropometric measurement. Hand tools, simple machine construction processes, and common materials. Prerequisites: Completion of the foundation program and approval of the department.

221. INDUSTRIAL DESIGN I. 4 HOURS. Fundamental concepts of design; individualized projects based on general user behavior and average anthropometric measurements. Basic manufacturing processes using simple machine tools, stock components, and common material. Prerequisite: AD 220.

222. INDUSTRIAL DESIGN II. 4 HOURS. Design concepts, planning, and organization of simple systems; individualized projects based on general user behavior and human factors analysis. Complex, machine-tool mass production. Special emphasis on product safety. Prerequisite: AD 221.

223. INDUSTRIAL DESIGN III. 4 HOURS. Design concepts, planning, and organization of product systems; group projects based on physical and social aspects of user behavior. Numerically controlled production. Ecological effects of process and product. Prerequisites: AD 222 and credit or concurrent registration in AD 205.

224. INDUSTRIAL DESIGN IV. 4 HOURS. Design research concepts, planning, and organization of complex systems; group projects based on general user behavior in socioeconomic contexts. Automated mass production. Resources management. Prerequisites: AD 205, 223.

225. INDUSTRIAL DESIGN V. 4 HOURS. Design research concepts, planning, and organization of environmental systems; group projects based on user behavior in political and socioeconomic contexts. Cybernetically monitored tooling processes. Special emphasis on user design-participation. Prerequisite: AD 224.

230. PAINTING I. 4 HOURS. Construction and preparation of canvases, boards, papers, and other surfaces; mixing of grounds, glazes, and paints in their relationship to the two-dimensional image. Prerequisite: Completion of the foundation program.

231. PAINTING II. 4 HOURS. Abstract and figurative painting and drawing; their interrelations. Spatial relations, color, form, lighting, and texture. Subjective and controlled studies. Prerequisite: AD 230.

232. PAINTING: OBJECT-IMAGE. 4 HOURS. Object imagery, spatial relationships, and emotional, analytical, and psychological content in various media. Prerequisite: AD 231.

233. PAINTING: ABSTRACT. 4 HOURS. Theories of spatial organization, optical phenomena; experimental employment of various media. Prerequisite: AD 231.

234. PAINTING: SPACE AND COLOR. 4 HOURS. Theories and practices of color and color phenomena; pigment, light, and spatial illusion. Prerequisite: AD 231.

235. PAINTING: SPACE AND FORM. 4 HOURS. Object imagery, spatial relationships, and emotional, analytical, and psychological content in various media. Prerequisite: AD 231.

240. SCULPTURE I. 4 HOURS. May be repeated once under a different instructor. Traditions and major directions of contemporary sculpture; orientation to concepts of three-dimensionality and relevant processes and techniques. Prerequisite: Completion of the foundation program.

241. SCULPTURE II. 4 HOURS. May be repeated three times. Continuation and development in depth of the content and concepts of Art-Design 240. Prerequisite: AD 240.

246. CERAMICS I. 4 HOURS. Same as Art 206. Basic techniques in clay forming processes; hand and potter's wheel. Prerequisite: Sophomore standing.

247. CERAMICS II. 4 HOURS. Same as Art 207. More advanced techniques in clay forming; basic glaze formulation and firing techniques. Prerequisite: AD 246.

250. PRINTMAKING. 4 HOURS. An introductory course: past and present activity and future possibilities of printmaking as a philosophical, social, and political force; orientation to and practice in the various techniques of stencil, relief, planographic, and intaglio processes. Prerequisite: Completion of the foundation program.

251. SERIGRAPHY. 4 HOURS. May be repeated for a total of 8 hours of credit. Principles and techniques of serigraphic (silk screen) printing. Prerequisite: Credit or concurrent registration in AD 250 or Art 203.

252. LITHOGRAPHY. 4 HOURS. May be repeated for a total of 8 hours of credit. Basic principles and techniques of stone and metal plate lithography. Prerequisite: Credit or concurrent registration in AD 250 or Art 203.

253. INTAGLIO. 4 HOURS. May be repeated for a total of 8 hours of credit. Principles and techniques of intaglio printmaking. Prerequisite: Credit or concurrent registration in AD 250 or Art 203.

254. RELIEF PRINTMAKING. 4 HOURS. May be repeated for a total of 8 hours of credit. Introduction to techniques: woodcut, linocut, wood engraving, and collagraph. Prerequisite: Credit or concurrent registration in AD 250 or Art 203.

260. PHOTOGRAPHY I. 4 HOURS. Introduction to photography; basic familiarity with the camera, studio, and laboratory. Prerequisites: Completion of either the architecture or art foundation program and approval of the department.

261. PHOTOGRAPHY II. 4 HOURS. Continues Art-Design 260. Basic familiarity with the camera, studio, and laboratory. Prerequisite: AD 260 or consent of the instructor.

262. PHOTOGRAPHY III. 4 HOURS. The communicative possibilities of the photograph as an isolate and as a series. Prerequisite: AD 261 or consent of the instructor.

263. STUDIO PHOTOGRAPHY. 4 HOURS. Applications of photography in the studio. Prerequisite: AD 262 or consent of the instructor.

264. ADVANCED DOCUMENTARY PHOTOGRAPHY. 4 HOURS. The photographic process applied to recording, documenting, and interpreting real life situations and events. Prerequisite: AD 262 or consent of the instructor.

265. ADVANCED PHOTOGRAPHY. 4 HOURS. Instructor-originated projects in any area of photographic activity. Prerequisite: AD 264 or 263 or consent of the instructor.

266. COLOR PHOTOGRAPHY. 4 HOURS. Processes, techniques, and materials and their application. Prerequisite: AD 262 or 267 or consent of the instructor.

267. PHOTOGRAPHICS. 4 HOURS. Introduction to high contrast emulsions and related materials. Experimentation with graphic applications of photography. Prerequisite: AD 261 or consent of the instructor.

268. MEDIA EXTENSION. 4 HOURS. Individual projects utilizing mixed media. Prerequisite: AD 267 or consent of the instructor.

269. ARCHITECTURAL PHOTOGRAPHY. 4 HOURS. For students in architecture; environment, function, detail, models, scale, lighting, point of view. Prerequisite: AD 260 or consent of the instructor.

270. CINEMA I. 4 HOURS. Basic film structure. Experimentation with time structure, persistence of vision, and cinematic expression through short-term projects using simple motion picture techniques. Prerequisite: Completion of the foundation program.

271. CINEMA II. 4 HOURS. Experimental approach to the communicative possibilities of cinema. Introduction to basic film handling tools and methods. Prerequisites: AD 270 and concurrent registration in AD 276.

272. CINEMA III. 4 HOURS. Continues Art-Design 271. Analysis of objects and events with the motion picture camera; advanced techniques. Prerequisites: AD 271 and concurrent registration in AD 276.

273. CINEMA IV. 4 HOURS. Projects involving the communication of specific ideas through the motion picture medium. Prerequisites: AD 272 and concurrent registration in AD 276.

274. ANIMATION. 4 HOURS. Special introduction to basic techniques, including CEL animation. Use of type, color, shape, and texture on the animation stand. Prerequisite: AD 270.

276. FILM COLLOQUIUM. 1 HOUR. May be repeated twice. Open to all students. Film showings and analyses; special lectures by persons involved in the field. Prerequisites: Film area majors, AD 270 and concurrent registration in AD 271, 272, or 273; others, consent of the instructor.

281. FOUNDATIONS OF ART EDUCATION. 4 HOURS. Methods and techniques of teaching art. Emphasis on creative and artistic development and the application of psychological and educational theories and practices to the teaching of art. Prerequisites: Ed 170, 210.

282. ART EDUCATION THEORY. 4 HOURS. Problem-solving, survey and evaluation of pertinent studies and theories in art education. Prerequisite: Credit or concurrent registration in AD 281.

283. ART EDUCATION PRACTICE. 4 HOURS. Practical experience in classroom teaching. Workshop in conjunction with selected elementary schools prior to taking Art-Design 284. Prerequisites: Junior standing, AD 281.

284. EDUCATIONAL PRACTICE WITH SEMINAR I. 8 HOURS. Same as Education 270. The first half of a two-segment sequence of practice teaching, including seminar, to meet certification requirements for teaching in the elementary or secondary school. Prerequisites: Ed 250, admission to advanced standing, and recommendation of the department of specialization.

285. EDUCATIONAL PRACTICE WITH SEMINAR II. 8 HOURS. Same as Education 271. The second half of a two-segment sequence of practice teaching, including seminar, to meet certification requirements for teaching in the elementary or secondary school. Prerequisites: Ed 250, credit or concurrent registration in AD 284, admission to or continuation of advanced standing, and recommendation of the department of specialization.

300. ART AND DESIGN SYNTHESIS. 4 HOURS. May be repeated for credit. Individual-project course. Students develop projects that synthesize the experience of 200-level courses in the Department of Art. Emphasis on interdisciplinary activities. Prerequisites: 40 hours of 200-level courses in the Department of Art and approval of the department.

301. INDEPENDENT STUDY. 4 TO 12 HOURS. Students may enroll in more than one 4-hour section per term or may repeat the course in 4-hour sections in subsequent terms. Independent study under the supervision of a staff member in an area of design or plastic and graphic arts not covered in the regular curriculum. Offered at the request of the student and at the discretion of the staff members concerned. Prerequisites: 30 hours of 200-level courses and approval of the department.

302. SEMINAR ON CONTEMPORARY VISUAL ARTS. 4 HOURS. Special problems concerning the contemporary visual artist's relation to the other arts. Discussion, readings, lectures. Prerequisite: 24 hours in architecture and art at the 200 level or above.

303. PHOTOGRAPHY-FILM TUTORIAL. 4 TO 16 HOURS. Students may enroll in more than one 4-hour section per term or may repeat the course in 4-hour sections in subsequent terms. Independent study course. Sustained projects in any area of film activity or still photography. Prerequisites: AD 265 or 275 and approval of the department.

304. PROFESSIONAL PRACTICE. 2 HOURS. Professional practice and management, proposals, contracts, and legal issues for designers. Prerequisite: AD 212 or 222 or consent of the instructor.

305. PLASTIC AND GRAPHIC ARTS. 4 TO 16 HOURS. Students may enroll in more than one 4-hour section per term or may repeat the course in 4-hour sections in subsequent terms. Individual projects developed by each student through tutorial consultation with an assigned instructor; may involve supportive consultation in all areas of the department to permit breadth and invention in media and processes. Prerequisites: 25 hours of appropriate 200-level courses and approval of the department.

307. COLLOQUIUM ON DESIGN THEORY. 2 TO 4 HOURS. May be repeated with the approval of the department. Design theories in relation to new technologies and systems of communication and to local and regional problems. Prerequisite: Completion of the foundation program or consent of the instructor.

308. COMPUTER ART-DESIGN. 4 HOURS. May be repeated twice for credit. The computer as a tool for the artist-designer. Prerequisites: Senior standing and Math 194 or the equivalent.

309. TEKART. 4 HOURS. May be repeated twice for credit. Technological art; emphasis on group projects leading to exhibition or event. Prerequisites: Senior standing and AD 308 or 208.

310. COMMUNICATIONS DESIGN. 4 TO 16 HOURS. Students may enroll in more than one 4-hour section per term or may repeat the course in 4-hour sections in subsequent terms. A comprehensive project in the area of social communications. A total program or a series of related units for use in one or more communications media is developed by each student through tutorial consultation with an assigned instructor. Prerequisites: AD 215 and approval of the department.

312. MASS PRINTING TECHNOLOGY. 4 HOURS. Lectures, field trips, and laboratory experience. Prerequisite: AD 212 or consent of the instructor.

313. TELEVISION MEDIA. 4 HOURS. Television methods and techniques as related to the needs of the graphic communicator. Prerequisite: AD 212 or consent of the instructor.

320. INDUSTRIAL DESIGN. 4 TO 16 HOURS. Students may enroll in more than one 4-hour section per term or may repeat the course in 4-hour sections in subsequent terms. Design of physical systems based on user behavior, technical resources, and environmental factors. System failures and product dysfunctions at the man/machine, work space, and environmental levels. Projects are developed by the student through tutorial consultation with an assigned instructor. Prerequisites: AD 225 and approval of the department.

342. SCULPTURE III: ADVANCED STUDIO. 8 HOURS. Must be repeated twice. Experiment and study in depth of contemporary concepts, processes, and techniques to develop a personal, creative visual language. Primarily self-directed under the supervision of the entire sculpture faculty. Prerequisite: Credit or concurrent registration in AD 241.

350. INDEPENDENT STUDY IN PRINTMAKING. 2 TO 6 HOURS. May be repeated for a maximum of 12 hours of credit. Independent study in an area not covered by existing course offerings or exploration in greater depth of a problem or area covered in a previously taken course. Prerequisite: 20 hours of printmaking, including AD 250 and any four of AD 251, 252, 253, 254, 351.

351. ADVANCED PRINTMAKING STUDIO. 4 HOURS. May be repeated once. Expansion of basic techniques and introduction to new media; emphasis on experimentation and innovation. Prerequisite: 12 hours of printmaking, including AD 250 and any two of AD 251, 252, 253, 254.

360. PHOTOGRAPHY COLLOQUIUM. 1 HOUR. May be repeated twice. Films, lectures, and discussion on the application and appreciation of photography. Special lectures on related subjects. Prerequisite: Completion of the foundation program in art or consent of the instructor.

370. DOCUMENTARY FILM PRODUCTION. 4 HOURS. Group or individual projects dealing with the communication of fact through the motion picture medium. Prerequisite: AD 273 or consent of the instructor.

History of Architecture and Art

Donald L. Ehresmann, PhD, Chairman of the Department

Professors: John D. McNee, MA.

Associate Professors: Donald L. Ehresmann, PhD; David M. Sokol, PhD; Carroll W. Westfall, PhD.

Assistant Professors: Ross Edman, MA; Carol LaBranche, PhD; Robert Munman, PhD; Laurence Ruggiero, PhD; Paul Sprague, PhD (Adjunct).

Instructors: Devin Burnell, MA; J. Paul Carrico, BA; Jethro M. Hurt III, MA; Charles White, MA.

Lecturers: Ann W. Goodfellow, MA.

Teaching Associates: John W. Nunley, MA.

Curriculum in the History of Architecture and Art

For the Bachelor of Arts, 180 hours in required courses in the department and the college, in general education courses, and in electives. See *General University Requirements.*

Foundation Courses

12 quarter hours of History of Architecture and Art 142, 143, 144
12 quarter hours in the Departments of Architecture and of Art, chosen with the approval of an adviser

Courses for the Major

A minimum of 40 quarter hours in History of Architecture and Art courses at the 200 and 300 levels.

16 quarter hours in the history of architecture and art, selected from one of the following concentrations:
1. Ancient and classical
2. Medieval and Byzantine
3. Renaissance and baroque
4. American and modern
5. Oriental
6. Primitive and prehistoric
7. Architectural history

One course chosen from each of three other areas exclusive of Area 7. Either Area 5 or Area 6 must be represented.

A minimum of eight quarter hours selected from architectural history at the 200 or 300 level.

If architectural history is chosen as the area of concentration, a minimum of 12 quarter hours must be chosen from outside that area.

HAA 291

Either HAA 391—Special Studies *or* HAA 392—Readings in Art History *or* HAA 333—Architectural Literature, Theory, and Criticism

A reading knowledge of one modern foreign language, usually French, Spanish, Italian, or German, should be attained by the end of the junior year. Students intending to pursue graduate work in the field should acquire French and/or German as soon as possible.

A minor is optional.

Departmental Distinction: A candidate must have a 4.00 (A=5.00) all-University grade point average and a 4.50 grade point average in history of

architecture and art courses beyond the 100 level and must pass a departmental comprehensive examination.

Courses (HAA)

115. INTRODUCTION TO ART HISTORY. 4 HOURS. Introduction to the hypotheses of art. Visual and stylistic analysis, study of iconology, sociology of art, economics of art, criticism, the artist's role in history.

116. THE LANGUAGE OF ARCHITECTURE. 4 HOURS. Introduction to the basic visual elements of architecture. Visual analysis of major monuments in the history of architecture and related painting and sculpture.

117. CRITICAL AND HISTORICAL APPROACHES TO ARCHITECTURE. 4 HOURS. Basic ideas, points of view, and methods of architectural history and criticism. Discussion of potential values and uses of architectural history and criticism for the architect and layman. The respective roles of the architect, architectural historian, critic, and consumer. Prerequisite: HAA 115 or 116 or consent of the instructor.

142. HISTORY OF ARCHITECTURE AND ART I. 4 HOURS. Form and meaning in architecture, sculpture, painting, and the allied arts from antiquity through the Middle Ages.

143. HISTORY OF ARCHITECTURE AND ART II. 4 HOURS. Form and meaning in architecture, sculpture, painting, and the allied arts from the early Renaissance through the late Baroque period.

144. HISTORY OF ARCHITECTURE AND ART III. 4 HOURS. Form and meaning in architecture, sculpture, painting, and the allied arts from neoclassicism to the present.

201. PREHISTORIC ART. 4 HOURS. The art and artifacts of the Paleolithic and Neolithic peoples of Europe and Asia. Prerequisite: HAA 115 or 142 or consent of the instructor.

202. AFRICAN ART. 4 HOURS. Survey of the tribal arts of the major cultures of sub-Saharan Africa.

203. INDIAN ARTS OF THE AMERICAS. 4 HOURS. Same as Latin American Studies 203. Survey of the arts of the major pre-Columbian cultures of Mesoamerica, South America, and the North American Indians.

211. ART AND ARCHEOLOGY OF THE ANCIENT NEAR EAST. 4 HOURS. The development of painting, sculpture, and allied arts in Egypt, western Asia, and the Aegean from the beginning of the Bronze Age to the end of the second millenium BC. Prerequisite: HAA 115 or 142 or consent of the instructor.

212. GREEK ART AND ARCHEOLOGY. 4 HOURS. The development of painting, sculpture, and the allied arts of Greece from the end of the Bronze Age through the Hellenistic period. Prerequisite: HAA 115 or 142 or consent of the instructor.

213. ROMAN ART AND ARCHEOLOGY. 4 HOURS. Painting, sculpture, and the allied arts of ancient Italy; special emphasis on the development of Roman civilization. Prerequisite: HAA 115 or consent of the instructor.

221. EARLY CHRISTIAN AND BYZANTINE ART. 4 HOURS. Same as Religious Studies 231. The art and architecture of the Latin West and the Greek East from the Age of Constantine through the First Golden Age of Byzantine art under Justinian. Prerequisite: HAA 115 or 142 or consent of the instructor.

222. EARLY MEDIEVAL ART. 4 HOURS. Same as Religious Studies 232. The art and architecture of Western Europe from the Dark Ages through the early Romanesque; special attention to the Carolingian and Ottonian revivals of antiquity. Prerequisite: HAA 115 or 142 or consent of the instructor.

223. MEDIEVAL ART: 1100 to 1400. 4 HOURS. Same as Religious Studies 233. Art and architecture of the mature Romanesque through the High Gothic ages. Prerequisite: HAA 115 or 142 or consent of the instructor.

224. RELIGIOUS ART AND ARCHITECTURE. 4 HOURS. Same as Religious Studies 224. Survey of the relationship between the visual arts and Christianity, Judaism, Islam, Hinduism, and Buddhism.

231. ANCIENT ARCHITECTURE. 4 HOURS. The development of the architecture of the ancient Near East, Greece, and Rome. Prerequisite: HAA 115 or 142 or consent of the instructor.

232. MEDIEVAL ARCHITECTURE. 4 HOURS. Same as Religious Studies 238. The development of early Christian, Byzantine, Romanesque, and Gothic architecture. Prerequisite: HAA 115 or 144 or consent of the instructor.

233. RENAISSANCE AND BAROQUE ARCHITECTURE. 4 HOURS. The development of European architecture from 1400 to 1750. Prerequisite: HAA 115 or 144 or consent of the instructor.

234. AMERICAN ARCHITECTURE. 4 HOURS. The development of architecture in colonial America and the United States from 1600 to 1900. Prerequisite: HAA 115 or 144 or consent of the instructor.

235. EUROPEAN ARCHITECTURE: 1750 to 1900. 4 HOURS. Romantic Classicism and Gothic Revival in England, France, and Germany. Other revival styles and Art Nouveau. Building in iron and concrete. Prerequisite: HAA 115 or 144 or consent of the instructor.

236. TWENTIETH-CENTURY ARCHITECTURE. 4 HOURS. The development of architecture in Europe and the United States from 1900 to the present. Prerequisite: HAA 115 or 144 or consent of the instructor.

237. JAPANESE ARCHITECTURE. 4 HOURS. Same as Asian Studies 213. Religious, domestic, and landscape architecture. Prerequisite: HAA 115 or 144 or consent of the instructor.

238. PRE-COLUMBIAN ARCHITECTURE. 4 HOURS. Architecture of North, Central, and South America before 1500. Prerequisite: HAA 115 or 144 or consent of the instructor.

241. ART OF THE RENAISSANCE IN ITALY. 4 HOURS. Painting, sculpture, and architecture of the fifteenth and sixteenth centuries. Prerequisite: HAA 115 or 143 or consent of the instructor.

242. ART OF THE RENAISSANCE IN NORTHERN EUROPE. 4 HOURS. The art of the Lowlands, France, Germany, and England; emphasis on illuminated

manuscripts, panel painting, and the work of Van Eyck, Van der Weyden, Bosch, Lochner, Durer, and the School of Fontainebleau. Prerequisite: HAA 115 or 143 or consent of the instructor.

251. ART OF THE BAROQUE. 4 HOURS. Painting, sculpture, and the allied arts from the seventeenth through the mid-eighteenth centuries; emphasis on the work of Bernini, Rubens, Rembrandt, and Velasquez. Prerequisite: HAA 115 or 144 or consent of the instructor.

261. ART OF THE NINETEENTH CENTURY. 4 HOURS. Painting, sculpture, and the allied arts in Western Europe and the United States. Prerequisite: HAA 115 or 144 or consent of the instructor.

262. ART OF THE TWENTIETH CENTURY. 4 HOURS. Painting, sculpture, and the allied arts in Western Europe and the United States. Prerequisite: HAA 115 or 144 or consent of the instructor.

271. ART OF CHINA. 4 HOURS. Same as Asian Studies 215. Survey of Chinese painting, sculpture, and related arts from Neolithic times to the eighteenth century. Prerequisite: HAA 115 or 144 or consent of the instructor.

272. ART OF JAPAN. 4 HOURS. Same as Asian Studies 216. Survey of Japanese architecture, sculpture, painting, woodcuts, and related arts from prehistoric times to the nineteenth century. Prerequisite: HAA 115 or 144 or consent of the instructor.

273. ART OF INDIA AND SOUTHEAST ASIA. 4 HOURS. Same as Asian Studies 217. Survey of architecture, sculpture, and painting from the Indus Valley civilization to the Mughal period. Prerequisite: HAA 115 or 144 or consent of the instructor.

280. HISTORY OF INDUSTRIAL DESIGN. 4 HOURS. Materials, techniques, and products from antiquity to the present; production methods; the role of the designer in industry and society. Prerequisite: 3 hours of HAA or consent of the instructor.

281. ART IN AMERICA TO 1860. 4 HOURS. Painting, sculpture, and the significant handicrafts from Colonial America through the mid-nineteenth-century United States. Emphasis on portraiture, historical painting, and the romantic landscape. Prerequisite: HAA 115 or 144 or consent of the instructor.

282. ART IN AMERICA FROM 1860 TO 1945. 4 HOURS. Painting, sculpture, and the decorative arts from the mid-nineteenth century through World War II. The emergence of an American art consciousness and progress toward international leadership. Prerequisite: HAA 115 or 144 or consent of the instructor.

284. HISTORY OF PHOTOGRAPHY. 4 HOURS. Technological and artistic development. Prerequisite: Sophomore standing or consent of the instructor.

285. HISTORY OF THE FILM I. 4 HOURS. From the beginnings in the 1890s to the establishment of the talking picture in the early 1930s. Prerequisite: Sophomore standing or consent of the instructor.

286. HISTORY OF THE FILM II. 4 HOURS. From the establishment of sound and the genres of the 1930s to the present. Prerequisite: Sophomore standing or consent of the instructor.

288. THE INTELLECTUAL REVOLUTION OF THE SEVENTEENTH AND EIGHTEENTH CENTURIES AS VIEWED THROUGH THE ARTS. 4 HOURS. Same as Humanities 288 and Music 288. Evidence in the visual arts and music of the impact of the new cosmology on men's minds, imaginations, and emotions. Prerequisite: Sophomore standing.

291. ART HISTORY TUTORIAL. 4 HOURS. The methodology and philosophies of art history. Application to selected problems in the field. Readings, discussions, and reports. Prerequisites: Junior standing and 12 hours of history of architecture and art at the 200 and 300 level.

311. THE ANCIENT CITY. 4 HOURS. The historical development of the city in the ancient Near East, Greece, and the Roman Empire. Prerequisite: Graduate standing in architecture or 8 hours of the history of ancient architecture and art or consent of the instructor.

320. THE MEDIEVAL CITY. 4 HOURS. Forms of city plans and urban architecture and their relationship to surrounding cultural and institutional factors. Prerequisite: Arch 242 or 4 hours of history of architecture and art in the medieval area or consent of the instructor.

323. GOTHIC SCULPTURE. 4 HOURS. Development of sculpture in northern Europe from 1140 to 1530. Prerequisites: Junior standing and 4 hours of history of architecture and art at the 200 level.

325. SEMINAR ON MEDIEVAL ART. 4 HOURS. Individual conferences on assigned papers are required. Selected problems in the history of medieval art. Series of lectures followed by student reports. Prerequisites: Junior standing and 4 hours of history of architecture and art at the 200 level or consent of the instructor.

331. SEMINAR ON THE HISTORY OF ARCHITECTURE. 4 HOURS. Selected problems. Prior to registration the student should be advised by the instructor. Prerequisite: 12 hours from HAA 231 through 238 or consent of the instructor.

332. READINGS IN THE HISTORY OF ARCHITECTURE. 4 HOURS. May be repeated for credit three times. Individually planned readings on selected topics under the supervision of a faculty member. Prerequisites: 12 hours from HAA 231 through 238 and approval of the instructor and the department.

333. LITERATURE, THEORY, AND CRITICISM. 4 HOURS. Selected readings and discussion of significant writers on architecture. Prerequisites: 12 hours from HAA 231 through 238 and approval of the instructor and the department.

334. CHICAGO BUILDING. 4 HOURS. Architectural and technical history of Chicago's commercial buildings from 1871 to the present. Prerequisite: 12 hours from HAA 231 through 238.

335. WRIGHT AND HIS CONTEMPORARIES: 1890 TO 1910. 4 HOURS. Frank Lloyd Wright's domestic buildings in the Chicago area and his relationship to other members of the Prairie School of Midwest architecture. Lectures, discussions, and field trips. Prerequisite: 12 hours from HAA 231 through 238.

336. SEMINAR: ADLER AND SULLIVAN. 4 HOURS. Critical study of Chicago's foremost architectural partnership: monuments, theories, and practice. Prerequisites: 12 hours from HAA 231 through 238 and HAA 334.

340. THE RENAISSANCE AND BAROQUE CITY. 4 HOURS. Forms of city plans and urban architecture in relationship to cultural and institutional characteristics. Prerequisite: Arch 242 or 4 hours of the history of architecture and art Renaissance and Baroque sequence or consent of the instructor.

341. ART OF THE FIFTEENTH CENTURY IN FLORENCE. 4 HOURS. Stylistic and iconographic studies of the works of the major painters, sculptors, and architects. Florentine history and literature in their relation to the visual arts. Prerequisites: Junior standing and 4 hours of history of architecture and art at the 200 level.

342. ART OF THE HIGH RENAISSANCE. 4 HOURS. Art of the great Italian centers during the late fifteenth and early sixteenth centuries. Emphasis on Leonardo, Raphael, Bramante, Bellini, Georgione, and Michelangelo. Prerequisites: Junior standing and 4 hours of history of architecture and art at the 200 level.

343. ITALIAN ART FROM 1520 TO 1600. 4 HOURS. Art of the sixteenth century; emphasis on painting and sculpture. Special attention to Correggio, Pontormo, Bronzino, Gianbologna, Michelangelo, Palladio, Titian, and Tintoretto. Prerequisites: Junior standing and 4 hours of history of architecture and art at the 200 level.

361. PROSEMINAR ON MODERN PAINTING. 4 HOURS. May be repeated for credit at the discretion of the department. Selected examples; development and diffusion of style and iconography. Analogies in the history of ideas and events, technical change, and other pertinent material. Prerequisites: Junior standing and 4 hours of history of architecture and art at the 200-level.

362. PROSEMINAR ON MODERN SCULPTURE. 4 HOURS. May be repeated for credit at the discretion of the department. Selected examples; development and diffusion of style and iconography. Analogies in the history of ideas and events, technical change, and other pertinent material. Prerequisites: Junior standing and 4 hours of history of architecture and art at the 200-level.

363. CONTEMPORARY ART. 4 HOURS. The most recent developments in contemporary art, its theories and production. Prerequisites: Junior standing and 4 hours of history of architecture and art at the 200-level.

370. FAR EASTERN CERAMICS. 4 HOURS. Same as Asian Studies 314. History and appeciation of the major art form of China, Korea, Japan, and South Asia; pottery, stoneware, and porcelain. Prerequisites: 8 hours of Asian studies and 12 hours of history of architecture and art at the 200 level or consent of the instructor.

371. CHINESE LANDSCAPE PAINTING. 4 HOURS. History from the origins to the twentieth century; major trends and figures. Prerequisite: HAA 271 or 12 hours of Asian studies or consent of the instructor.

372. JAPANESE PRINTS. 4 HOURS. Same as Asian Studies 316. History from the fourteenth century to the present; emphasis on Ukiyoe Hanga of the seventeenth to nineteenth centuries. Prerequisite: HAA 272 or the equivalent or consent of the instructor.

381. SEMINAR ON AMERICAN ART. 4 HOURS. Individual conferences on assigned papers are required. American artists or movements selected with the permission of the instructor. Prerequisites: Junior standing and 12 hours of history of architecture and art at the 200 level or consent of the instructor.

385. SEMINAR: FILM ISSUES. 4 HOURS. Individual conferences on assigned papers are required. Studies in genres, schools, individual artists, critics, and theorists of the motion picture. Subject areas are specified by the instructor. Prerequisites: Junior standing and HAA 285, 286 or consent of the instructor.

391. SPECIAL STUDIES IN THE HISTORY OF ART. 4 HOURS. May be repeated for a maximum of 12 hours. Discussions each term of special problems, with attention to a major theme, period, or artist. Student reports are required. Prerequisites: Senior standing, 12 hours of history of architecture and art at the 200 and 300 level, and approval of the instructor and the department.

392. READINGS IN ART HISTORY. 4 HOURS. May be repeated for credit at the discretion of the department. Individually planned readings on selected topics under the supervision of a faculty member. Prerequisites: Senior standing, 12 hours of history of architecture and art beyond the 100 level, and approval of the instructor and the department.

393. HISTORY OF COLLECTING AND MUSEOLOGY. 4 HOURS. Individual conferences on assigned papers are required. The history of collecting and patronage. The scope and operation of public and private collections and museums. Lectures, discussions, and field trips. Prerequisites: Junior standing and HAA 142, 143, 144 or consent of the instructor.

College of Business Administration

Ralph Westfall, PhD, Dean of the College
William J. Dunne, MBA, Associate Dean
Alvin D. Star, PhD, Associate Dean
Norman S. Smith, BS, Assistant Dean
Larry D. Azuse, MBA, Assistant Dean

Accreditation

The College of Business Administration is a full member of the American Assembly of Collegiate Schools of Business. This association is recognized by the National Commission on Accrediting as the highest official collegiate accrediting agency for business education at the undergraduate and master's levels. Membership in the association is open only to schools and colleges whose intellectual climate insures the offering of programs of high academic quality and whose teaching and administrative staff possesses the qualifications, experience, professional interests, and scholarly productivity essential for the successful conduct of a broad and liberal rather than an unduly specialized baccalaureate curriculum in business administration.

Objective of the Degree Program

The basic objective of the College of Business Administration is to aid students in finding excitement, satisfaction, and a sense of fulfillment in the exercise of their abilities while at the same time providing them with the broad base of knowledge necessary to meet the challenges of a rapidly changing society. This implies the development of basic knowledge, skills, and attributes that are widely transferable and applicable throughout a lifetime: a mastery of the scientific method, skill in communication, an understanding of people and the ability to work with them effectively, an ability to organize resources toward specific ends, an ability to concentrate wholeheartedly on the job at hand until it is completed, an open and flexible

mind, and the ability and desire to continue learning both on and off the job. The curriculum, therefore, includes courses outside the College of Business Administration, courses in the various functional fields of business administration, and specialized courses in the selected major field. Each course contributes to this broad base of knowledge as well as to the development of the specialized skills necessary to make a significant contribution in administration.

Graduation Requirements of the College

General Requirements

A minimum of 184 quarter hours, exclusive of the formerly required hours in physical education and hours in military science, is required for the Bachelor of Science offered by the College of Business Administration. This 184 hours must be distributed such that the curriculum requirements listed below are met with reference to specific courses and generic requirements. The last 45 hours of University work counting toward the degree must be taken at Chicago Circle.

In order to earn a degree in the College of Business Administration, a student must choose a major from accounting, economics, finance, management, marketing, or quantitative methods or complete the program in engineering management that is offered jointly by the Colleges of Business Administration and Engineering. A short description of the engineering management program is found under the College of Engineering and more detailed information on the program can be obtained by consulting the dean's office in either college. The requirements for each major in the College of Business Administration are listed with course descriptions at the end of this chapter.

Each department in the College of Business Administration has a departmental residency requirement that must be met in order to qualify for a degree in that department. To fulfill the department residency requirement, at least 16 quarter hours of credit must be completed at the University of Illinois at Chicago Circle in the department in which the student is majoring, exclusive of courses offered by that department in the Administrative Core.

A grade point average of at least 3.00 (A=5.00) must be earned in each of the following to qualify for graduation:

A. All courses taken at Chicago Circle.
B. All Chicago Circle courses counted toward the degree.
C. All courses (Chicago Circle and transfer) counted in the major toward the degree.
D. All courses (Chicago Circle and transfer) counted toward the degree.

The student must also meet all University requirements for the degree as stated in this catalog.

A dual-major degree may be earned by fulfilling the degree requirements in two departments and the college and University requirements; the extra credits required for such a degree depend upon the departments involved. The designation of the dual major does not appear on the diploma, but it is noted on the student's official record.

Curriculum

Non-Administrative Core Requirements

English Composition	101 and 102 or the equivalent, 8 hours
Social Sciences	Economics 120, 121—Principles of Economics, 8 hours
	12 hours
Humanities	12 hours
Natural Sciences and/or Mathematics	12 hours
Mathematics	109, 111, and 112, 9 hours
Electives (Non-business)	Electives outside the college must raise the total non-administrative core hours to 76. Exact elective hours are reduced whenever a student has earned more than the minimum hours shown for any area above.
Administrative Core Requirements	
Accounting	110, 111, 8 hours
Economics	318, 319, 8 hours
Finance	350, 4 hours
Management	340, 355, 359, 12 hours
Marketing	360, 370, 8 hours
Quantitative Methods	270, 271, 272, 12 hours
Electives (Business)	Electives in the college must raise the total administrative core hours to 60.
Major Requirements and Electives Approved by the Department	
	36 hours required or approved by the major department
Free Electives	
	12 hours chosen from courses inside or outside of the College of Business Administration that normally count toward the degree in the college.

Summary of the distribution of credit hours:

Non-Administrative Core Requirements	76
Administrative Core Requirements	60
Major Requirements	36
Electives	12
Total	184

A Typical Program in the College of Business Administration Common to All Areas except Quantitative Methods

Freshman Requirements

English Composition 101	English Composition 102	Non-business elective
Mathematics 109	Mathematics 111[1]	Mathematics 112[1]
Economics 120	Economics 121	Non-business elective
Humanities[2]	Humanities[2]	Humanities[2]

Sophomore Requirements

Accounting 110	Accounting 111	Non-business elective
Quantitative Methods 270	Quantitative Methods 271	Quantitative Methods 272
Social sciences[2]	Social sciences[2]	Social sciences[2]
Natural sciences[2]	Natural sciences[2]	Natural sciences[2]

Junior Requirements

Management 340	Management 355	Major course[3]
Marketing 370	Marketing 360	Major course[3]
Economics 318	Economics 319	Non-business elective
Finance 350	Major course[3]	Business elective

Senior Requirements

Major course[3]	Major course[3]	Major course[3]
Major course[3]	Major course[3]	Major course[3]
Business elective	Free elective	Management 359
Free elective	Free elective	

1. Students with an interest in areas requiring a strong mathematics background should substitute Mathematics 130 and 131 for Mathematics 111 and 112.

2. The courses listed in this catalog under the College of Liberal Arts and Sciences entitled "Courses Fulfilling the Humanities, Social Sciences, and Natural Sciences Requirements" are eligible in these classifications with the addition of Geography 101-103, *except* Mathematics 115-120, all economics courses, and Finance 360.

3. A major course is one that is required or *approved* by the student's major department.

Curriculum Notes

Mathematics. All entering students, except those with transfer credit in college algebra, must take the mathematics placement test. The student's score on the test determines whether enrollment should be in Mathematics 100, 104 or in the regular mathematics sequence.[4] Placement in Mathematics 100 requires completion of Mathematics 100 and 101, since 101 is a prerequisite for the regular mathematics sequence.[4] If the student's test score indicates enrollment in Mathematics 104, the course must be satisfactorily completed as a prerequisite to the regular mathematics sequence. Students who feel that their mathematics background is inadequate at the high school level should investigate the Mathematics 170, 171, 172 sequence. *Mathematics 100, 101, 104, 105, 106, 107, 108, 115, 116, 117, 118, 119, 120, 170, 171, and 172 do not carry credit toward graduation.*The regular mathematics sequence must be completed as early as possible since many sophomore and junior courses require knowledge of their content. Placement in Mathematics 109 indicates that the student is prepared to begin the regular mathematics sequence.

A student who is required to take Mathematics 100 and 101 or Mathematics 104 or who chooses to take the Mathematics 170, 171, 172 sequence may not be able to complete graduation requirements in 12 terms and should plan for one or more additional terms.

Students who plan to major in quantitative methods should consult with the Department of Quantitative Methods if they have already completed Mathematics 111 and/or 112 to determine which courses should be taken to complete their mathematics background. Quantitative methods majors who have not yet completed Mathematics 111 or 112 should substitute Mathematics 130 and 131 for these courses and should consult the Department of Quantitative Methods in planning their curricula. Students with an interest in areas requiring a strong mathematics background should also choose Mathematics 130 and 131 instead of Mathematics 111 and 112.

Non-Business Electives must be taken outside the College of Business Administration.

Business Electives must be chosen from courses offered by the College of Business Administration not required in the Administrative Core and not used to fulfill the major requirements.

Free Electives may be chosen from courses inside or outside the College of Business Administration not used elsewhere in the curriculum.

Administrative Core. All students in the college are required to take a common core of business courses that provide basic knowledge about the different areas of business that the student must have, regardless of the chosen major.

Advising and Course Selection

Students advance enroll for each term, usually during the fourth, fifth, or sixth week of the preceding term. Notification is made by mail of the date of advance enrollment. Two steps must be completed:

4. The regular mathematics sequence 109, 111, 112 (or Mathematics 109, 130, 131) may begin with 109 or 111 or 130 as 109 is not a prerequisite for 111 or 130. A student may not receive credit for Mathematics 130 after completing Mathematics 112.

1. Advising and course selection.
2. Completion of registration forms.

Student programs do not require approval by a faculty adviser. The student should consult this catalog and the Timetable for guidance in program planning. Special note should be taken of the course descriptions, prerequisites, and other restrictions listed in the Timetable and of the requirements listed below. Students are urged to seek advice from the Office of the Associate Dean, 2424 University Hall (or from an adviser in the major department), whenever they are in doubt about course selections. The Office of the Associate Dean announces the time of advising meetings during the term for those students who have not declared a major and wish to attend. After a student has declared a major, a faculty adviser in the major department is assigned. Advising procedures for students who have declared a major are announced by their respective departments. Students who wish clarification of the information in this catalog or have questions about their records should consult the Office of the Associate Dean, 2424 University Hall.

The responsibility for course selection rests with the student. Satisfactory progress toward the degree is defined as progressive fulfillment of all the requirements listed below:

A. All students must carry not more than 20 hours each term. This applies to students on probation and to those in good standing.
B. Every student must enroll in mathematics *every term*, beginning with the first term at Chicago Circle, until the Mathematics 109, 111, 112 sequence or its equivalent is completed.
C. All sophomores *must* enroll in (1) Economics 120 or 121 and (2) Accounting 110 or 111 until these sequences are completed. These courses must be completed before the end of the sophomore year.
D. Students must enroll in Quantitative Methods 270, 271, 272 as soon as Mathematics 109, 111, 112 have been completed, preferably in their sophomore year. These courses should be completed before the end of the junior year.
E. English Composition 101 and 102 must be completed before the end of the freshman year.
F. Transfer students must fulfill freshman and sophomore requirements as quickly as possible and must fulfill all the foregoing requirements.
G. After attaining junior standing, each student must enroll for at least two courses in the Administrative Core each term until the Administrative Core is completed.

A student who fails to show reasonable progress toward the degree, as defined above, is placed on progress probation for the following term. A student on progress probation who fails to make satisfactory progress toward the degree is dropped.

Program Changes

A student may add a course during the first two weeks of the term and may drop a course until the end of the sixth week of the quarter (fifth week in the summer session). After the deadline, a student may not drop a course without permission of the college petitions committee. Such permission is granted only in unusual circumstances. A student who adds or drops a course in violation of the college or University rules is subject to the progress probation and drop rules.

Academic Honors and Scholarships

Dean's List

Students who have completed a minimum of 12 quarter hours (exclusive of courses taken on a pass-fail basis) during a given term and have earned a grade point average of at least 4.00 for that term (excluding grades in physical education, in basic military science, and in noncredit courses) are placed on the Dean's List for that term.

College Honors

To qualify for College Honors the student must:

1. Meet the college and University requirements for graduation.
2. Have carried at least 12 hours of academic work each term, exclusive of basic military training and formerly required physical education.
3. Have attained at least a 4.00 (A=5.00) average in all courses or a 4.50 average during the final two years (not less than 72 quarter hours) of courses completed at the University of Illinois and counted toward graduation by the college.

Note:

1. The work of the final term is not computed in this average.
2. The computations exclude transfer credit received during the last 72 hours.

Department Honors

Department Honors may be awarded if the student meets the criteria established by the department in which the major is completed and by the college. The diploma will carry the designation Distinction, High Distinction, or Highest Distinction. The criteria for each department follow:

Accounting

1. Distinction: 4.00 overall and 4.10 in accounting.
2. High Distinction: 4.50 overall *or* 4.40 overall and 4.70 in accounting.
3. Highest Distinction: 4.75 overall *or* 4.60 overall and 4.90 in accounting.

Economics

1. Distinction: Overall average of 4.00 to 4.499.
2. High Distinction: 4.50 to 4.749.
3. Highest Distinction: 4.75 and above.

Finance

1. Distinction: Overall average of 4.00 to 4.499.
2. High Distinction: 4.50 to 4.749.
3. Highest Distinction: 4.75 and above.

Management

1. Distinction: 4.00 overall and 4.10 in management.
2. High Distinction: 4.50 overall and 4.60 in management.
3. Highest Distinction: 4.70 overall and 4.90 in management.

Marketing

1. Distinction: 4.00 overall and 4.10 in marketing.
2. High Distinction: 4.50 overall and 4.60 in marketing.
3. Highest Distinction: 4.75 overall and 4.90 in marketing.

Quantitative Methods

1. Distinction: 4.00 overall and 4.25 in quantitative methods.
2. High Distinction: 4.25 overall and 4.50 in quantitative methods.
3. Highest Distinction: 4.50 overall and 4.75 in quantitative methods.

Scholarships, Financial Aid, and Special Awards

The College of Business Administration has been awarded scholarship money for students in several areas of concentration. See *Financial Aid* for scholarships available to students in the College of Business Administration.

Students in the College of Business Administration are also eligible to apply for other financial assistance. Information on other scholarships and financial aid can be obtained from the Office of Financial Aid, 1320 University Hall.

Additional Rules of the College

Declaration of Major

A student must declare a major before enrolling in any 300-level course offered by the College of Business Administration beyond the Administrative Core requirements. The college offers six majors: accounting, economics, finance, management, marketing, and quantitative methods. The specific requirements for each major follow.

In the terms following that in which the major is declared, the student must fulfill the requirements of the major chosen.

Probation and Drop Rules

Academic probation and drop decisions are made on the basis of University of Illinois at Chicago Circle averages. Transfer averages are not used in determining academic probation and drop decisions except to determine if an entering student is to be placed on probation.

Probation Rules

1. A student in good standing is placed on academic probation in any term in which less than a 3.00 average is earned. A student entering the senior year with a college graduation average below 3.00 is placed on academic probation. (The college graduation average is computed from those courses taken at Chicago Circle that are counted toward the student's degree and all transfer courses that meet degree requirements.)
2. A student is continued on academic probation (unless dropped) until the cumulative Chicago Circle average is raised to a 3.00. A student may not remain on academic probation for more than two consecutive terms of enrollment.

3. A student is placed on progress probation who does not make satisfactory progress toward the degree as defined above.

Drop Rules

1. Except for freshmen, a student on academic probation who fails to earn a 3.00 average in any term may be dropped.
2. A student who fails to earn at least a 2.00 average in any term may be dropped.
3. A student who does not achieve a Chicago Circle cumulative average of at least 3.00 after two terms on academic probation may be dropped.
4. A student on progress probation who fails to make satisfactory progress toward the degree as defined above is dropped.

Petition Procedure

Any rule, regulation, or action of the college may be appealed through the use of the student petition. These petitions are ruled on by the college student relations committee and often require the prior action of one of the departments of the University. The student is responsible for obtaining that action on the petition form. Petitions are available in the Office of the Associate Dean, 2430 University Hall. After completion, the petition must be returned to that office for action.

Pass/Fail Regulations

Students in the College of Business Administration may elect to take courses on a pass/fail option under the following conditions:

1. Only students on clear status may elect to take a course on the pass/fail option. Students on probation or on undetermined status at the time at which they elect the option are not eligible. However, students who are on undetermined status may request approval to elect this option from an adviser in the college.
2. Only full-time students (enrolled in a minimum of 12 hours) are eligible.
3. Only one course per term may be taken on pass/fail.
4. A maximum of 32 hours of credit may be earned at UICC under the pass/fail option.
5. Courses that may *not* be taken on pass/fail option include:
   a. Composition 101 and 102
   b. Economics 120, 121
   c. Mathematics 109, 110, 111, 112, 130, 131
   d. Courses used to fulfill major requirements (36 hours)
   e. Administrative core courses other than business electives

It is the responsibility of the student to determine eligibility under the above regulations. Students requesting a course under the pass/fail option will not be informed if they are not allowed to register for pass/fail because of ineligibility.

Accounting

Professors: Edwin Cohen, PhD, CPA, Head of the Department; Samuel Fox, JD, PhD, CPA (Emeritus); Alfonse T. Malinosky, MBA, CPA; Albert J. Schneider, MBA, CPA.

Associate Professors: James R. Adler, PhD, CPA; S. Madonna Kabbes, MBA, CPA (Emeritus); LeRoy J. Pryor, DBA, CPA.

Assistant Professors: Chiou-hsiung Chang, PhD; Josephine A. Margraff, MBA; James Mensching, MBA; Wagdy K. Sharkas, PhD, CPA; Gerald F. Whittaker, PhD.

Instructors: Paul R. O'Brien, MBA, CPA; Larry M. Zanger, JD, CPA.

Lecturers: Arthur J. Brown, MBA, CPA (Visiting); Leslie J. Burton, MS (Visiting); Stanford J. Cole, MBA, CPA; Eugene A. Costabile, MBA, CPA; Andrew A. Golko, JD (Visiting); Joyce P. Koenig, MAS, CPA (Visiting); Harvey M. Margolis, JD, CPA (Visiting); James E. Moore, MS, CPA (Visiting); Alfred V. Robinson, Jr., PhD (Visiting); Jack Shapiro, MBA, CPA (Visiting); Richard L. Weiss, JD, CPA.

Accounting is concerned with (1) the measurement of income and wealth derived from economic enterprise and (2) the communication of information about the financial condition of and the results of activities of economic organizations. The specific functions include management control, tax management, and the attest function.

Required for a major in accounting—36 hours, distributed as follows:

Required Courses—28 hours

Accounting 311—Accounting Theory I
Accounting 312—Accounting Theory II
Accounting 313—Accounting Theory III
Accounting 320—Managerial Cost Analysis
Accounting 330—Auditing
Accounting 340—Federal Income Tax
Accounting 350—Business Law I

Elective Courses—8 hours chosen from the following:

Accounting 325—Computer Accounting Systems
Accounting 341—Advanced Federal Income Tax
Accounting 342—Estate, Gift, and Trust Taxation
Accounting 351—Business Law II
Accounting 360—Accounting for Nonprofit Organizations
Accounting 380—International Accounting
Accounting 390—Special Topics in Accounting
Accounting 399—Independent Study in Accounting

Suggested Course Schedule for Accounting Majors

Junior Year

First Quarter	*Hours*
Accounting 311	4
Management 340	4
Marketing 370	4
Finance 350	4
	16

Second Quarter	
Accounting 312	4
Management 355	4
Marketing 360	4
Economics 318	4
	16

Third Quarter	
Accounting 313	4
Accounting 320	4
Economics 319	4
Business elective	4
	16

Senior Year

First Quarter	*Hours*
Accounting 330	4
Accounting 340	4
Business elective	4
Free elective	4
	16

Second Quarter	
Accounting 350	4
Accounting elective	4
Free elective	4
Free elective	4
	16

Third Quarter	
Accounting elective	4
Non-business elective	4
Management 359	4
	12

Courses (Actg)

105. ACCOUNTING FOR NONBUSINESS STUDENTS. 4 HOURS. Not open to students enrolled in the College of Business Administration or to students who have credit in Accounting 110. Topics include financial statements, evaluation of accounting data, and budgeting.

110. INTRODUCTION TO FINANCIAL ACCOUNTING. 4 HOURS. Methods, practices, and concepts underlying the preparation of financial reports. Emphasis on the corporate form of business and alternative accounting methods as they affect investors and other users of financial statements. Prerequisites: Sophomore standing and enrollment in the College of Business Administration or approval of the department.

111. INTRODUCTION TO MANAGERIAL ACCOUNTING. 4 HOURS. Use of accounting information for evaluation of planning and control decisions. Topics include budgeting, incremental cost, benefit analysis, and cost-volume-profit relationships. Prerequisites: Sophomore standing, Actg 110, and enrollment in the College of Business Administration or approval of the department.

289. COOPERATIVE BUSINESS ADMINISTRATION PRACTICE. 0 HOURS. Same as Economics 289, Finance 289, Management 289, Marketing 289, and Quantitative Methods 289. Cooperative education in a work-study program combining academic learning with firsthand experience in business practices. Prerequisites: 45 hours of credit in any field, including 15 hours at UICC, and consent of the college coordinator of the cooperative plan.

311. ACCOUNTING THEORY I. 4 HOURS. Development and applications as related to financial statements, valuation of assets, and measurements of income. Prerequisites: Actg 111 and declaration of a major.

312. ACCOUNTING THEORY II. 4 HOURS. Development and applications as related to financial statements, liabilities, owner's equity, and measurement of income. Special topics include price level changes and accounting changes. Prerequisites: Actg 311 and declaration of a major.

313. ACCOUNTING THEORY III. 4 HOURS. Development and applications as related to investments, business combinations, foreign exchange, and fund accounting. Special topics include earnings per share and the statement of changes in financial position. Prerequisites: Actg 312 and declaration of a major.

320. MANAGERIAL COST ANALYSIS. 4 HOURS. Analysis of costs for decision-making, planning, and control; standards and budgets as a guide to measuring and controlling performance; costing systems for various purposes. Prerequisites: Actg 312 and declaration of a major.

325. COMPUTER ACCOUNTING SYSTEMS. 4 HOURS. Aspects of computer systems designed to perform accounting functions. Topics include programming, file construction, data retrieval, and controls. Prerequisites: Math 194, Actg 320, and declaration of a major.

330. AUDITING. 4 HOURS. History, function, and theory; nature of necessary evidence for the accountant's professional opinion concerning a financial position and the results of enterprise operations; applications of statistical sampling; auditing computerized systems. Prerequisites: Actg 313, 320, and declaration of a major.

340. FEDERAL INCOME TAX. 4 HOURS. Concepts of federal income tax; its effects on decisions of corporations, partnerships, individuals, and trusts. Prerequisites: Actg 313 and declaration of a major.

341. ADVANCED FEDERAL INCOME TAX. 4 HOURS. Tax factors affecting business decisions of corporations and partnerships; special problems in reorganizations, liquidations, and personal holding companies. Advanced development of basic concepts discussed in Accounting 340. Prerequisites: Actg 340 and declaration of a major.

342. ESTATE, GIFT, AND TRUST TAXATION. 4 HOURS. Internal Revenue Code treatment of estate, gift, and trust entities; some legal principles necessary to comprehend tax planning. Prerequisites: Actg 341 and declaration of a major.

350. BUSINESS LAW I. 4 HOURS. Fundamental rules of law applicable to business activity. Contract and agency; the nature and formation of contractual obligations; sales of personal property; commercial paper under the Uniform Commercial Code. Prerequisites: Junior standing and declaration of major.

351. BUSINESS LAW II. 4 HOURS. Business units through which business is conducted and the legal rules governing formation, operation, and dissolution of partnerships and corporations. Basic rules of real property law, insurance and bankruptcy, bailments, and carriers. Accountants' legal liability. Restraint of trade. Prerequisites: Actg 350 and declaration of a major.

360. ACCOUNTING FOR NONPROFIT ORGANIZATIONS. 4 HOURS. Special accounting problems and techniques associated with both private and public nonprofit organizations. Prerequisites: Actg 313, 320, and declaration of a major.

380. INTERNATIONAL ACCOUNTING. 4 HOURS. An advanced course. Pertinent areas of accounting from a multinational viewpoint. Four specific areas covered are financial accounting for international operations, multinational managerial accounting and control, comparative international accounting principles, and international financial reporting. Prerequisites: Actg 313, 320, and declaration of a major.

390. SPECIAL TOPICS IN ACCOUNTING. 4 HOURS. Selected topics in various fields, including public accounting, managerial accounting, and tax accounting. Selected readings from professional and academic journals and cases for analysis. Prerequisites: Actg 313, 320 and declaration of a major.

399. INDEPENDENT STUDY IN ACCOUNTING. 4 HOURS. Advanced independent study in approved topics. A written report prepared under the guidance of a faculty member is required. Prerequisites: Actg 313, 320, declaration of a major, and approval of the department.

Economics

Professors: George Rosen, PhD, Head of the Department; Antonio Camacho, PhD; William D. Grampp, PhD; Richard F. Kosobud, PhD; Oscar Miller, MA.

Associate Professors: Eliezer B. Ayal, PhD; Gilbert Ghez, PhD; John F. MacDonald, PhD; Joseph Persky, PhD; Houston H. Stokes, PhD.

Assistant Professors: Gilbert W. Bassett, PhD; Carson W. Bays, PhD; H. Woods Bowman, PhD; Frances V. Flanagan, PhD; Winifred B. Geldard, MBA, CPA (Emeritus); Tapan Mitra, PhD; Ronald Moses, PhD; Steven Rock, PhD; Arthur O. Seltzer, MA; Mo-Yin Tam, PhD; William D. White, PhD.

Lecturers: Jose Alberro, MA; Ali T. Akarca, MA; Larry Azuse, MBA; Steven Balkin, MA (Visiting); Franklyn Broude, MA; Norman S. Smith, BS.

Economics deals on the one hand with the allocation of resources both within the economy as a whole and within the households, business firms, and governmental institutions that constitute the economy and on the other hand with the factors determining the level of national economic activity. It thus provides background essential for the study of business administration and the social sciences.

Required for a major in economics—36 hours, distributed as follows:

Required Courses—20 hours
Economics 320—Macroeconomic Theory
16 additional hours in 300-level economics not used elsewhere in the curriculum.

Elective Courses—16 additional hours chosen from courses in the College of Business Administration or outside the College of Business Administration that normally count toward the degree and that are not used elsewhere in the curriculum.

Suggested Course Schedule for Economics Majors

Junior Year

First Quarter	*Hours*
Management 340	4
Marketing 370	4
Economics 318	4
Finance 350	4
	16

Second Quarter	
Management 355	4
Marketing 360	4
Economics 319	4
300-level economics course	4
	16

Third Quarter	
Economics 320	4
300-level economics course	4
Non-business elective	4
Business elective	4
	16

Senior Year

First Quarter	*Hours*
300-level economics course	4
300-level economics course	4
Business elective	4
Free elective	4
	16

Second Quarter	
Economics elective	4
Economics elective	4
Free elective	4
Free elective	4
	16

Third Quarter	
Economics elective	4
Economics elective	4
Management 359	4
	12

Courses (Econ)

120. PRINCIPLES OF ECONOMICS I. 4 HOURS. The elements of economic analysis: concepts of economy, market organization, price determination and function.

121. PRINCIPLES OF ECONOMICS II. 4 HOURS. The elements of economic analysis, continued: determination of the level of economic activity; the effect of monetary and fiscal policies on economic activity levels. Applications to economic policy. Prerequisite: Econ 120.

225. ECONOMICS OF EDUCATION. 4 HOURS. Does not count toward the major in economics. Description and analysis of economic aspects of educational activities. Education as an investment; education and earnings; equity and efficiency in provision of education; issues in financing of education; higher education in the American economy. Prerequisite: Econ 120.

232. INTRODUCTION TO URBAN ECONOMICS. 4 HOURS. Does not count toward the major in economics. Economic problems of cities; poverty, housing markets, urban transportation, urban public finance, crime, pollution. Prerequisite: Econ 121.

234. PRINCIPLES OF ECONOMIC DEVELOPMENT IN APPLICATION. 4 HOURS. Does not count toward the major in economics. Same as Latin Ameri-

can Studies 218. Does not count for credit in Latin American studies unless the selected geographical area is Latin America. Analysis of the conditions required for the economic development of various selected geographical areas, such as Latin America, Asia, Africa. Prerequisite: Econ 121 or consent of the instructor.

240. ECONOMIC ANALYSIS OF HEALTH PROBLEMS. 4 HOURS. Does not count toward the major in economics. Same as Health Resources Management 325 (School of Public Health). Elementary tools of microeconomics applied to current problems of resource allocation in the production of health services. Characteristics of United States health care sector; consumer demand for medical services; production and supply of health care facilities and personnel; productivity and cost measurement; restrictions on competition; health insurance proposals; cost-benefit analysis and environmental health. Prerequisite: Econ 120.

289. COOPERATIVE BUSINESS ADMINISTRATION PRACTICE. 0 HOURS. Same as Accounting 289, Finance 289, Management 289, Marketing 289, and Quantitative Methods 289. Cooperative education in a work-study program combining academic learning with firsthand experience in business practices. Prerequisites: 45 hours of credit in any field, including 15 hours at UICC, and consent of the college coordinator of the cooperative plan.

318. ECONOMICS OF DECISION-MAKING IN THE FIRM. 4 HOURS. Students may not receive credit for both Economics 318 and 321. Theory and application of the marginalist approach to decision, including treatment of rational decision-making under linear constraints. Prerequisites: Junior standing and Econ 121, Math 112 or the equivalents.

319. APPLIED PUBLIC ADMINISTRATION ECONOMICS. 4 HOURS. Principles underlying optimal policy-making in government. Analysis of macroeconomic policy; emphasis on the problem of conflicts among policy goals and techniques and use of forecasts. Evaluation of government resource allocation policy, including cost-benefit analysis. Prerequisite: Econ 318.

320. MACROECONOMIC THEORY. 4 HOURS. Theories of the determination of aggregate income, employment, and rate of growth in closed and open economies. Prerequisites: Math 112 or the equivalent; Econ 319 or 321 or consent of the instructor. Business administration students must have declared a major.

321. MICROECONOMIC THEORY. 4 HOURS. Operation of individual markets; market structure; theory of the firm; theory of production; demand theory; general equilibrium and welfare economics. Prerequisites: Econ 121, Math 112 or the equivalents. Business administration students must have declared a major.

322. MANAGERIAL ECONOMICS. 4 HOURS. Application of economic theory to decision-making in the business firm. Demand and cost analysis, including demand forecasts; price policy of the individual firm; capital budgeting; production analysis; uses of operations research methods. Prerequisite: Econ 318 or 321. Business administration students must have declared a major.

323. BUSINESS CONDITIONS ANALYSIS. 4 HOURS. Application of economic theory to analysis of changes in aggregate income and employment; quan-

titative economic models and their uses in the prediction of aggregate and more refined levels of business activity. Prerequisite: Econ 319 or 320. Business administration students must have declared a major.

324. ECONOMIC HISTORY OF THE UNITED STATES. 4 HOURS. Growth of the American economy from colonial times to the present; special emphasis on contributing forces and factors. Prerequisites: Econ 121 and 8 hours of social sciences. Business administration students must have declared a major.

325. ECONOMIC HISTORY OF EUROPE. 4 HOURS. Evolution of the economic institutions of Europe, beginning with the origins of capitalism; the development of industry, commerce, transportation, finance, and labor. Prerequisites: Econ 121 and 8 hours of social sciences. Business administration students must have declared a major.

326. HISTORY OF ECONOMIC THOUGHT I. 4 HOURS. Evolution of positive and normative economics from the sixteenth to the nineteenth centuries. Prerequisites: Econ 121 and 9 hours of social sciences. Business administration students must have declared a major.

327. COMPARATIVE ECONOMIC SYSTEMS. 4 HOURS. Description and analysis of the normative and positive characteristics of capitalism, fascism, democratic socialism, and communism. Prerequisites: Econ 121 and 8 hours of social sciences. Business administration students must have declared a major.

328. PUBLIC FINANCE: FEDERAL. 4 HOURS. Theories of public-private resource allocation, principles of taxation, taxes administered at the federal level, federal expenditure programs, debt management. Prerequisite: Econ 319 or 321. Business administration students must have declared a major.

329. INDUSTRIAL ORGANIZATION. 4 HOURS. The structure of markets; behavior of firms within the market environment; measures of industrial concentration; economics of scale; mergers and the merger movement; price discrimination and tie-in sales; monopoly and cartel arrangements; resale price maintenance; innovation and technological change. Prerequisite: Econ 318 or 321. Business administration students must have declared a major.

330. GOVERNMENT AND BUSINESS. 4 HOURS. The rationale and the mechanisms of the social control of business; the effects of government action in influencing the behavior of business firms; the precompetitive policy embodied in the Sherman Act and related legislation. Prerequisite: Econ 318 or 321. Business administration students must have declared a major.

331. LABOR ECONOMICS. 4 HOURS. Economic problems and issues of trade union organization and wage theory; job security, hours, working conditions, labor legislation, unemployment. Prerequisite: Econ 318 or 320 or 321. Business administration students must have declared a major.

332. URBAN ECONOMICS. 4 HOURS. Same as Geography 333. Survey of economic problems of cities; the nature and function of cities; the demand for and supply of housing and urban land; the implications of location theory for the

spatial pattern of cities; the impact of government programs. Prerequisite: Econ 318 or 321 or Geog 330 or UPP 385. Business administration students must have declared a major.

333. INTERNATIONAL ECONOMICS. 4 HOURS. The balance of payments; fixed, flexible, and multiple exchange rates; the forward exchange market; the international trade multiplier; the transfer problem; capital flows; the law of comparative advantage; the gains from trade; tariffs and subsidies; the factor price equalization theorem; international economic communities. Prerequisite: Econ 318 or 320 or 321. Business administration students must have declared a major.

334. ECONOMIC DEVELOPMENT. 4 HOURS. Same as Geography 332. Basic problems and characteristics of underdeveloped countries; classical, neoclassical, and modern contributions to the theory of development; major proposals for accelerating development; basic approaches to economic development; laissez-faire, interventionism; role and methods of planning; foreign aid; economic integration. Prerequisite: Econ 319 or 320 or 321; or Econ 121, Geog 330. Business administration students must have declared a major.

335. ECONOMETRICS. 4 HOURS. Specification of economic models; measurement of variables; estimation of economic relationships and testing of economic hypotheses; single equation problems of estimation; introduction to simultaneous equation estimation. Prerequisites: Econ 320 and either 319 or 321. Business administration students must have declared a major.

336. INTRODUCTION TO MATHEMATICAL ECONOMICS. 4 HOURS. Application of mathematics to theories of consumer and producer behavior, to the determination of prices in markets, and to growth and stability features of macroeconomic models. Prerequisites: Econ 320 and either 319 or 321; Math 110, 112. Business administration students must have declared a major.

341. LOCATION THEORY AND SPATIAL ANALYSIS. 4 HOURS. Same as Geography 330. Spatial analysis in relation to theories of location of economic activity and regional development; theoretical systems; development and derivation of locational patterns of agricultural, manufacturing, and tertiary activities. Prerequisites: Geog 100 and one course from Geog 230, 231, 233, or Econ 120 and 8 hours of social sciences, or Mktg 360. Business administration students must have declared a major.

342. REGIONAL ECONOMICS. 4 HOURS. Same as Geography 334. Theory of location of economic activity, land use patterns, systems of cities, the spatial pattern of city regions, regional growth dynamics, interregional transactions analysis, spatial mobility of factors, regional income differences, regional welfare and policy. Prerequisites: Econ 320 and either 319 or 321; or Geog 100, 230. Business administration students must have declared a major.

343. GEOGRAPHIC MODELING OF TRANSPORTATION SYSTEMS. 4 HOURS. Same as Geography 335. The principles of spatial interaction; emphasis on commodity flows and passenger movements, the practicality of network analysis, and the impact of transportation facilities on land use and regional

development. Techniques include simulation and evaluation of existing transportation systems and solutions to theoretical transportation problems. Prerequisites: Geog 100 and 235 or Econ 120 and 8 hours of social sciences.

344. AREAL ORGANIZATION OF INTRAURBAN SYSTEMS. 4 HOURS. Same as Geography 350. Geographic aspects of intracity relationships. Topics include the city as a complex man-machine system and areal patterns of urban growth and development within the context of cross-sectional and longitudinal models. Prerequisites: One upper-division geographic research methods course, one two-course sequence in systematic geography, one course in either the geography 250 or 360 series; or Econ 332. Business administration students must have declared a major.

345. ADVANCED ECONOMIC STATISTICS. 4 HOURS. Same as Quantitative Methods 345. Probability, hypothesis testing, and estimation, with emphasis on economic applications; econometric models, multiple linear regression, and introduction to problems of estimation. Prerequisites: Math 370 and 372 or QM 272 or consent of the instructor. Business administration students must have declared a major.

351. HUMAN CAPITAL: THEORY AND APPLICATIONS. 4 HOURS. Concepts of capital applied to human assets; private and social returns to investments in man; applications of human capital theory to education, health, income inequality, and other topics. Prerequisite: Econ 319 or 321. Business administration students must have declared a major.

352. METROPOLITAN PUBLIC FINANCE. 4 HOURS. The alternative forms of economic structure employed by state and local governments to raise revenues and allocate resources. Prerequisite: Econ 319 or 321. Business administration students must have declared a major.

358. ECONOMIC HISTORY OF THE UNITED STATES PRIOR TO 1900. 4 HOURS. Credit is not given for both Economics 358 and 324. Description and analysis of the factors that influenced the path and rate of America's economic development up to 1900. Special emphasis on the economic sources of controversy among the various geographic regions of the nation, the impact of the Civil War and its aftermath on the economy, and the emergence of large-scale industry. Prerequisite: Econ 319 or 320 or 321; or Econ 121 and 8 hours of social sciences. Business administration students must have declared a major.

359. TWENTIETH-CENTURY AMERICAN ECONOMIC HISTORY. 4 HOURS. Economic trends and their impact on society from 1890 to the present. Special emphasis on the growing economic importance of government and big business in the economy. Prerequisite: Econ 319 or 320 or 321; or Econ 121 and 8 hours of social sciences. Business administration students must have declared a major.

383. TRANSPORTATION AND PUBLIC POLICY. 4 HOURS. Same as Management 383. The relationship between government and transportation in the United States. Topics include the evolution of transport policy, problems in transport regulation, and current issues in public policy. Prerequisite: Mgmt 380 or consent of the instructor. Business administration students must have declared a major.

390. SPECIAL TOPICS IN ECONOMICS. 4 HOURS. Exploration of an area not covered in existing course offerings; or study in greater depth, or at a more advanced level, of a problem or subject that is covered in an existing course. Subject matter, and sometimes the prerequisites, varies from term to term; prior to registration students should consult the department secretary for further information. Prerequisites: Senior standing and 15 hours of 300-level economics courses. Business administration students must have declared a major.

399. INDEPENDENT STUDY IN ECONOMICS. 2 TO 5 HOURS. May be repeated once for credit. For students who wish to do independent study in an area not covered by existing course offerings or to explore in greater depth a problem or subject covered in a previously taken course. Prerequisites: 15 hours of 300-level economics courses and consent of a faculty member and the head of the department. Business administration students must have declared a major.

Finance

Professors: William W. Tongue, PhD, Head of the Department.

Associate Professors: Fayette B. Shaw, PhD (Emeritus).

Assistant Professors: Owen K. Gregory, PhD; Hans G. Heymann, PhD; Suleman A. Moosa, PhD; Jon P. Paulsen, PhD.

Instructors: George C. Catsiapis, MS; Walter J. Worheide, MBA.

Lecturers: Tryfon J. Beazaglou, MA; James L. Grant, MA; Jeffrey L. Skelton, MA.

The finance curriculum explores the principles of financial analysis and control as applied to individual business firms, economic and financial factors bearing on the valuation and selection of securities, and the influence of the monetary and banking system on the general business level.

Required Courses—24 hours
Finance 351—Investments
Finance 352—Investment Policy
Finance 353—Problems in Business Finance
Finance 360—Money and Banking
8 additional hours in 300-level finance courses not used elsewhere in the curriculum.

Elective Courses—12 additional hours chosen from 300-level courses in the College of Business Administration (including finance), Mathematics 194, or any other course approved by a member of the finance faculty.

Suggested Course Schedule for Finance Majors

Junior Year

First Quarter	*Hours*	*Second Quarter*	
Management 340	4	Management 355	4
Marketing 370	4	Marketing 360	4
Economics 318	4	Economics 319	4
Finance 350	4	Finance 360	4
	16		16

Third Quarter
Finance 351 4
Finance elective 4
Non-business elective 4
Business elective 4
16

Second Quarter
Finance elective 4
Finance elective 4
Free elective 4
Free elective 4
16

Senior Year

First Quarter *Hours*
Finance 352 4
Finance 353 4
Business elective 4
Free elective 4
16

Third Quarter
Finance elective 4
Finance elective 4
Management 359 4
12

Courses (Fin)

100. PERSONAL FINANCE. 4 HOURS. Principles governing the intelligent management of personal finances: budgeting, use of credit, insurance, home ownership, stocks and bonds, mutual funds, taxes, retirement planning.

289. COOPERATIVE BUSINESS ADMINISTRATION PRACTICE. 0 HOURS. Same as Accounting 289, Economics 289, Management 289, Marketing 289, and Quantitative Methods 289. Cooperative education in a work-study program combining academic learning with firsthand experience in business practices. Prerequisites: 45 hours of credit in any field, including 15 hours at UICC, and consent of the college coordinator of the cooperative plan.

350. BUSINESS FINANCE. 4 HOURS. The nature of business finance and its relation to economics, accounting, and law; legal nature and forms of business enterprise; capital, capitalization, and financial planning; financial analysis and interpretation; initial financing, refinancing, working capital; income administration, including dividend policies, expansion; internal and external financial and economic relationships of the firm. Prerequisites: Junior standing, Actg 111, and Econ 120.

351. INVESTMENTS. 4 HOURS. Types and distinguishing features of securities, security markets, analysis of financial statements and principles of valuation, quality differences, selection of securities to meet varying personal and institutional objectives. Prerequisites: Fin 350, 360. Business administration students must have declared a major.

352. INVESTMENT POLICY. 4 HOURS. Varying strategies to meet diverse objectives; investments for individuals, business firms, banks, insurance companies, pension and profit-sharing funds; interrelation of investment policies and the economic environment. Prerequisite: Fin 351. Business administration students must have declared a major.

353. PROBLEMS IN BUSINESS FINANCE. 4 HOURS. Selected areas in advanced corporate finance, including short-term asset management; capital budgeting under certainty and uncertainty; capital structure and dividend policy and theory; valuation and risk; the structure of capital asset prices and the implications of that structure for financial policy of firms. Prerequisite: Fin 350. Business administration students must have declared a major.

354. SECURITY ANALYSIS. 4 HOURS. Interpretation and analysis of published financial statements for internal control and external evaluation. The financial characteristics of industrial, commercial, financial, transportation, public utility, real estate, and nonprofit institutions. Prerequisite: Fin 351. Business administration students must have declared a major.

355. REAL ESTATE FINANCE. 4 HOURS. Introduction to real estate investment decision-making and the execution of those decisions in an urban environment. Effects of the urban environment on the real estate investment decision process and the impact of real estate investments on the cities. Government real estate policies, taxes, sources of funds, and conditions in the financial markets. Prerequisite: Fin 350. Business administration students must have declared a major.

360. MONEY AND BANKING. 4 HOURS. Monetary and banking systems. The Federal Reserve System; monetary theory; international monetary relations; monetary policy in the United States. Prerequisites: Junior standing and Econ 121. Business administration students must have declared a major.

361. THEORY AND STRUCTURE OF FINANCIAL MARKETS. 4 HOURS. Consumption, saving, and the allocation of resources over time. Financial intermediation and the role of financial markets in allocating funds, absorbing risk, and providing liquidity. Financial institutions, relationship among markets, competition, and public policy. Prerequisite: Fin 360 or consent of the instructor. Business administration students must have declared a major.

371. MULTINATIONAL FINANCIAL MANAGEMENT. 4 HOURS. The international financial system and the application of the basic principles of business finance in an international context. Topics include the international monetary system, motives for and forms of direct foreign investment, political risk, exchange risk and hedging techniques, sources of funds, and policies with respect to asset management and taxation. Prerequisite: Fin 350. Business administration students must have declared a major.

372. FINANCIAL MANAGEMENT IN THE NONPROFIT SECTOR. 4 HOURS. Description, goals, and optimal financial policy in the private and public nonprofit sectors of the economy. Cost-benefit analysis, the social opportunity cost of public funds, and illustrative applications. Prerequisites: Fin 350, Econ 319 or 321 or consent of the instructor. Business administration students must have declared a major.

373. SMALL BUSINESS FINANCE. 4 HOURS. Aspects of acquiring funds that are uniquely associated with small business enterprises. Topics include the tradeoff of liquidity and profitability, management and working capital, and capitalization. Prerequisite: Fin 350. Business administration students must have declared a major.

399. INDEPENDENT STUDY. 2 TO 4 HOURS. May be repeated once for credit. For students in good standing in the College of Business Administration who wish to pursue advanced study in topics related to finance. A written report is required. Prerequisites: 16 hours of upper-division finance, consent of a faculty member and the head of the department.

Management

Professors: S. George Huneryager, PhD, Head of the Department; Bernard H. Baum, PhD; Raymond W. Colemen, PhD (Emeritus); Irvin L. Heckmann, PhD.

Associate Professors: Hale C. Bartlett, PhD; William J. Dunne, MBA; Bert E. Elwert, PhD; Ronald E. Jablonski, DBA; Ronald L. Miller, PhD; Andrew F. Sikula, PhD; Joseph A. Wolfe, PhD.

Assistant Professors: Maryann M. Albrecht, PhD; John E. Ettlie, PhD; William M. Sukel, DBA; David B. Vellenga, MBA.

Lecturers: Patrick E. Rea, MBA (Visiting); Fred Travis, MBA (Visiting).

The degree program in management provides students with a theoretical and practical preparation for responsible managerial and executive positions in a variety of work organizations. All specialized options within the Department of Management emphasize analytical preparation for effective decision-making and broad preparation for leadership positions.

Required for a major in management—36 hours, distributed as follows:

Required Courses—24 hours

Management 345—Organization Theory II
Management 352—Administrative Practices
Management 353—Personnel Management
Management 354—Industrial Relations Systems
Management 356—Operations and Systems Management II
Management 360—Business, Society, and Technology

Restricted Electives—12 hours, selected from one of the three areas of concentration: Manpower Administration and Union-Management Relations, Organization Design and Administration, or Operations and Systems Management.

Optional Program—A student wanting to vary this program for career reasons may petition the department head for changes in restricted electives by submitting an alternative program proposal.

Areas of Concentration

Operations and Systems Management—Provides the student with a sound background in the management sciences and in the production function common to all work organizations. Emphasis is on computer applications, management information systems, materials management, systems planning and design.

Manpower Administration and Union-Management Relations—Concerned with the effective utilization of human resources within work organizations. Emphasis is on the behavior of people at work and staff programs available to managers for more effectively utilizing people at work and for coping with human problems. Union-management relations are also explored.

Organization Design and Administration—Acquaints students with the many and varied aspects of the manager's role in complex working organizations. Stress is placed upon the internal dynamics of complex work organizations, the structural components, and the many personal and interpersonal problems of the manager.

Suggested Course Schedule for Management Majors

Junior Year

First Quarter	*Hours*
Management 340	4
Marketing 370	4
Economics 318	4
Finance 350	4
	16

Second Quarter	
Management 355	4
Marketing 360	4
Economics 319	4
Management 345	4
	16

Third Quarter	
Management 356	4
Management 352	4
Non-business elective	4
Business elective	4
	16

Senior Year

First Quarter	*Hours*
Management 353	4
Management 360	4
Business elective	4
Free elective	4
	16

Second Quarter	
Management 354	4
Management elective	4
Free elective	4
Free elective	4
	16

Third Quarter	
Management elective	4
Management elective	4
Management 359	4
	12

Courses (Mgmt)

289. COOPERATIVE BUSINESS ADMINISTRATION PRACTICE. 0 HOURS. Same as Accounting 289, Economics 289, Finance 289, Marketing 289, and Quantitative Methods 289. Cooperative education in a work-study program combining academic learning with firsthand experience in business practices. Prerequisites: 45 hours of credit in any field, including 15 hours at UICC, and consent of the college coordinator of the cooperative plan.

330. ORGANIZATIONAL PSYCHOLOGY. 4 HOURS. Same as Psychology 330. Individual psychological and group processes and their interaction with organizational structure. Behavioral factors in effective organizational change. Prerequisites: Psch 243, one course in social psychology or industrial psychology, and consent of the instructor.

333. MOTIVATION AND MORALE IN INDUSTRY. 4 HOURS. Same as Psychology 333. Concepts and methods in the assessment and modification of employee motivation, attitudes, and morale. Prerequisite: 12 hours of psychology, including Psch 332 or the equivalent.

335. PSYCHOLOGY OF INDUSTRIAL TRAINING. 4 HOURS. Same as Psychology 335. Psychological measurement techniques in assessing training needs and evaluating training effectiveness. Application of psychological techniques to the development of industrial training programs. Prerequisite: Psch 332 or the equivalent.

338. PSYCHOLOGY OF INDUSTRIAL CONFLICT. 4 HOURS. Same as Psychology 338. Behavioral analysis of the causes, dimensions, and modes of resolution of industrial conflict; special emphasis on labor-management relations. Prerequisite: Mgmt 330 or the equivalent.

340. ORGANIZATION THEORY I. 4 HOURS. Important theories of organization; their foundation, application, and consequences in the attainment of individual and management objectives. Focus on formal and informal aspects of organizations, authority relationships, and structural aspects. Prerequisite: Junior standing.

344. INDUSTRIAL SOCIOLOGY. 4 HOURS. Same as Sociology 344. Analysis of industrial institutions in contemporary society; management, labor, and the community. Prerequisite: 8 hours of sociology.

345. ORGANIZATION THEORY II. 4 HOURS. An analytical in-depth study of organizational theories, their development of empirical evidence for organization development practices, and their implications for management. Prerequisite: Mgmt 340. Business administration students must have declared a major.

352. ORGANIZATION BEHAVIOR. 4 HOURS. Executive and manager behavior in working organizations. Analysis of human problems and relationships at work. Leadership styles, problems of motivation and attitudes. Emphasis on behavioral sciences theory and technology as applied to business. Case method of analysis and study. Prerequisite: Mgmt 340. Business administration students must have declared a major.

353. MANPOWER MANAGEMENT. 4 HOURS. The subsystems of manpower planning, recruitment and selection, training and development, position control, audit and evaluation, and salary and benefit administration that constitute the manpower function of all organizations. Emphasis on the role of these activities as services and support-control systems. Prerequisite: Junior standing. Business administration students must have declared a major.

354. UNION-MANAGEMENT RELATIONS. 4 HOURS. Analysis of union impact on the management of organizations, including structure and functions of unions, collective bargaining as a decision-making process, government regulation of union-management relations, public policy issues, and alternative union-management relations systems. Prerequisite: Junior standing. Business administration students must have declared a major.

355. OPERATIONS AND SYSTEMS MANAGEMENT I. 4 HOURS. Application of management sciences to the planning and design of operational systems. Emphasis on strategic planning, selection of objectives, forecasting of and response to changing technology and system controls. Prerequisites: Junior standing and QM 270 or the equivalent.

356. OPERATIONS AND SYSTEMS MANAGEMENT II. 4 HOURS. Application of management sciences to operations and control of operational systems. Emphasis on systems operations facilities, systems standards and information flow,

system maintenance, and the behavioral interface and system control. Prerequisite: Mgmt 355 or the equivalent. Business administration students must have declared a major.

357. OPERATIONS AND SYSTEMS MANAGEMENT III. 4 HOURS. Emerging concepts in management science. Managerial applications of computer technology and utilization and related electronic data processing. Application of quantitative methods to information and control methods and systems. Process and systems design. Prerequisite: Mgmt 356.

359. BUSINESS POLICY. 4 HOURS. The formulation and implementation of policies that determine the long-term character and performance of business firms. Problems in policy are analyzed from the vantage point of top management rather than from the limited view of a functional specialist. Through written analysis, classroom discussion of cases, and experience in management simulation, students are exposed to a wide variety of top management problems. The topics and cases covered are also appropriate for students interested in the management of public institutions. Prerequisites: Completion of core requirements in the College of Business Administration; students must be within two terms of graduation.

360. BUSINESS, SOCIETY, AND TECHNOLOGY. 4 HOURS. Business and the corporate role in a complex technological society. Emphasis on the historical evolution of business; the many relationships of the corporation to its external environment; urban problems of business; the impact of the corporation on individual and group behavior. Prerequisite: Mgmt 340. Business administration students must have declared a major.

361. COMPARATIVE STUDY OF ORGANIZATIONS. 4 HOURS. The significant differences in organizations; the importance of these differences for the operation, management, and design of organizations. Prerequisite: Mgmt 340. Business administration students must have declared a major.

363. COLLECTIVE BARGAINING. 4 HOURS. Intensive examination of the structure and conduct of collective bargaining: the determination of the bargaining unit and bargaining representative; the negotiation and scope of contracts; the administration of contracts; the major substantive issues in negotiations; the procedures for resolving industrial conflict. Prerequisites: Mgmt 353, 354.

364. LABOR LAW AND NATIONAL LABOR POLICY. 4 HOURS. The evolution of national labor policy considered within a framework of labor legislation, court decisions, and administrative rules. Problems of effectuating labor agreements; problems of protecting individual employee rights in a collective bargaining context. Introduction to the legal and constitutional problems of government regulation of industrial and labor relations. Prerequisite: Mgmt 354 or consent of the instructor.

365. COMPENSATION SYSTEMS. 4 HOURS. Lecture and discussion of current compensation issues and problems. Topics include the psychology of money motivation, the current status of wage and salary administration, wage criteria, methods and techniques of job evaluation and job analysis, determination of pay grades and ranges, employee benefits and services, employee incentives, and special compensation issues. Prerequisite: Mgmt 353 or 354. Businesss administration students must have declared a major.

366. TECHNOLOGICAL FORECASTING. 4 HOURS. The methodology of forecasting the impact of technological change on the managerial process; empha-

sis on selection of goals and parameters, relevance of figures of merit, and various forecasting methodologies. Prerequisite: Mgmt 355 or the equivalent. Business administration students must have declared a major.

367. IMPACT OF TECHNOLOGICAL CHANGE. 4 HOURS. The impact of technological change on the business environment and the managerial process; emphasis on alternative futures and planning to attain desired ends. Prerequisite: Mgmt 355.

368. MANAGEMENT INFORMATION SYSTEMS. 4 HOURS. Design, operation, and control of managerial information systems; problems of system documentation, data management, programming management, and integration of real-time computer-based systems with the managerial process; relation of management information systems to system simulation and managerial research. Prerequisite: Mgmt 355.

371. MANAGEMENT AND ORGANIZATION DEVELOPMENT. 4 HOURS. Alternative strategies and methods for developing and increasing the creativity, flexibility, and productivity of the organization and its management personnel. Topics include the role of manpower development and structure in the organization's long-range plan, the role of interventionists, management consultants and centralized training and development departments, the systems view and the development function, traditional and contemporary development philosophies and techniques, criteria selection and evaluative research, and the framework for successful organization development and change. Readings, examples, and case studies from the public and private sectors. Prerequisite: Mgmt 340 or consent of the instructor. Business administration students must have declared a major.

373. COLLECTIVE BARGAINING IN PUBLIC EMPLOYMENT. 4 HOURS. Practices and legislation pertaining to union-management relations at the federal, state, and local levels of government. Procedural and policy issues confronting public employees, union officials, and government administrators. Prerequisite: Junior standing. Business administration students must have declared a major.

374. COMPARATIVE INDUSTRIAL RELATIONS SYSTEMS. 4 HOURS. Analysis of industrial relations structures, problems, and experiences in selected countries. Common and contrasting features of industrial relations systems are related to national economic, political, and social characteristics. The implications for management and economic development of differences among industrial relations systems. Prerequisite: Mgmt 354.

380. TRANSPORTATION SYSTEMS MANAGEMENT. 4 HOURS. Problems and practices, including the impact of public policy, capital facilities, industry structure, operations pricing, and environmental relationships. Prerequisites: Econ 120, 121, Mgmt 355 or consent of the instructor. Business administration students must have declared a major.

381. MANAGERIAL LOGISTICS. 4 HOURS. The management of all activities governing the physical flow of raw materials and finished goods through stages of production to points of final consumption. Key areas include design of logistics systems, transportation location theory, inventory control, and the use of mathematical techniques in solving problems of logistics management. A logistics system computer simulation game is used. Prerequisites: Econ 319 or 321, Mgmt 355 or consent of the instructor. Business administration students must have declared a major.

382. URBAN MASS TRANSPORTATION SYSTEMS MANAGEMENT. 4 HOURS. Managerial, economic, and environmental aspects, including development of urban transit, federal role in financing urban transit, labor relations, pollution and social benefits, marketing urban transit, congestion, peaking problems, and unique management problems. Prerequisites: Mgmt 340 and 355 or consent of the instructor. Business administration students must have declared a major.

383. TRANSPORTATION AND PUBLIC POLICY. 4 HOURS. Same as Economics 383. The relationship between government and transportation in the United States. Topics include the evolution of transport policy, problems in transport regulation, and current issues in public policy. Prerequisite: Mgmt 380 or consent of the instructor. Business administration students must have declared a major.

390. SPECIAL TOPICS IN MANAGEMENT. 4 HOURS. Exploration of an area not covered in existing course offerings or study in greater depth, or at a more advanced level, of a problem or subject covered in an existing course. Subject matter varies from term to term. Prerequisites: Senior standing, 15 hours of 300-level management courses, and consent of the instructor. Business administration students must have declared a major.

399. INDEPENDENT STUDY. 2 TO 4 HOURS. May be repeated once for credit. Advanced independent study in approved topics. A written report prepared under the guidance of a major professor is required. Prerequisites: 16 hours of upper-division management courses and consent of the head of the department. Business administration students must have declared a major.

Marketing

Professors: Robert E. Weigand, PhD, Head of the Department; Carl M. Larson, MBA; Hugh G. Wales, PhD (Emeritus); Ralph Westfall, PhD.

Associate Professors: Laurence P. Feldman, PhD; Mary Jane Schlinger, PhD; Alvin D. Star, PhD.

Assistant Professors: Andrew A. Brogowicz, MBA; Michael J. Hobor, PhD.

Lecturers: Wayne A. Lemburg, MS; Leonard A. Rosenstein, MBA; Eric S. Stein, MA; Carl E. Wolf, Jr., MBA; Richard E. Wright, MBA.

Required for a major in marketing—36 hours, distributed as follows:

Required Courses—24 hours

Marketing 361—Consumer Market Behavior
Marketing 362—Marketing Research
Marketing 365—Marketing Management

Plus 12 hours from among the following courses:
Marketing 363—Marketing Organization
Marketing 364—Managing Marketing Communications
Marketing 366—Comparative Marketing Systems

Marketing 367—Management Science in Marketing
Marketing 368—Problems in Marketing Research and Information Systems
Marketing 390—Special Topics in Marketing
Marketing 399—Independent Study in Marketing

Elective Courses—12 hours from the following:
1. Any marketing course not taken previously.
2. Any 300-level course offered by the Departments of Accounting, Economics, Management, Quantitative Methods, or Finance that is not required elsewhere in the curriculum.
3. Any 200-level course offered by the Departments of Mathematics, Psychology, or Sociology that is not required elsewhere in the curriculum.
4. Any other course that is approved by the Department of Marketing.

Suggested Course Schedule for Marketing Majors

Junior Year

First Quarter	*Hours*
Management 340	4
Marketing 370	4
Economics 318	4
Finance 350	4
	16

Second Quarter	
Management 355	4
Marketing 360	4
Economics 319	4
Non-business elective	4
	16

Third Quarter	
Marketing 361	4
Marketing elective	4
Marketing elective (Restricted)	4
Business elective	4
	16

Senior Year

First Quarter	*Hours*
Marketing 362	4
Marketing elective	4
Business elective	4
Free elective	4
	16

Second Quarter	
Marketing elective (Restricted)	4
Marketing elective (Restricted)	4
Free elective	4
Free elective	4
	16

Third Quarter	
Marketing 365	4
Marketing elective	4
Management 359	4
	12

Courses (Mktg)

289. COOPERATIVE BUSINESS ADMINISTRATION PRACTICE. 0 HOURS. Same as Accounting 289, Economics 289, Finance 289, Management 289, and Quantitative Methods 289. Cooperative education in a work-study program combining academic learning with firsthand experience in business practices. Prerequisites: 45 hours of credit in any field, including 15 hours at UICC, and consent of the college coordinator of the cooperative plan.

360. PRINCIPLES OF MARKETING. 4 HOURS. Required of all students in the College of Business Administration. The workings of the marketing system and the way in which marketing decisions are made. Prerequisite: Junior standing.

361. CONSUMER MARKET BEHAVIOR. 4 HOURS. Motivations underlying the market behavior of consumers, producers, middlemen; drives, emotions, desires, learning, memory; effects of demographic characteristics, social status, and reference groups on marketing action. Prerequisite: Mktg 360 or consent of the instructor. Business administration students must have declared a major.

362. MARKETING RESEARCH AND INFORMATION SYSTEMS. 4 HOURS. The gathering and interpretation of information used in solving marketing problems; pertinent modern research techniques from mathematics and the behavioral sciences are employed in developing an analytical structure. Prerequisites: Mktg 361 and QM 272 or the equivalents. Business administration students must have declared a major.

363. MARKETING ORGANIZATION. 4 HOURS. Principles underlying the development of an integrated distribution system; its relationship to the marketing structure of the firm; evaluation of decisions on raw material sources, plant and warehouse location, wholesale and retail outlets; analysis of the movement of products through marketing channels. Prerequisite: Mktg 360. Business administration students must have declared a major.

364. MANAGING MARKETING COMMUNICATIONS. 4 HOURS. Analysis of communication information among producers, middlemen, and consumers for marketing purposes; managerial problems in directing a firm's promotional efforts; personal selling, advertising, sales promotion, public relations. Prerequisite: Mktg 360. Business administration students must have declared a major.

365. MARKETING MANAGEMENT. 4 HOURS. Seminar. Building marketing programs to implement the achievement of marketing objectives. Individual and group research and presentation from the viewpoint of major marketing executives of the firm; business case analysis. Prerequisite: 20 hours of marketing. Business administration students must have declared a major.

366. COMPARATIVE MARKETING SYSTEMS. 4 HOURS. An advanced course. The structures and processes of domestic marketing systems in other countries in a framework of comparative cultural, political, economic, and social systems. Prerequisite: Mktg 360. Business administration students must have declared a major.

367. MANAGEMENT SCIENCE IN MARKETING. 4 HOURS. Introduction to management science concepts and techniques used in the analysis and solution of marketing management problems in areas of advertising, pricing, product planning, personal selling, and distribution through the study of actual applications. Prerequisites: Mktg 360, QM 272 or consent of the instructor. Business administration students must have declared a major.

368. PROBLEMS IN MARKETING RESEARCH AND INFORMATION SYSTEMS. 4 HOURS. An advanced course. Pertinent marketing research and informational problems and techniques are used to solve an actual marketing problem. Prerequisite: Mktg 362. Business administration students must have declared a major.

369. INTERNATIONAL MARKETING. 4 HOURS. The way a firm sells across international frontiers, including product modification, pricing, intercultural communication, preparation of goods for shipment, and documentation. Focus on problems faced by small firms and multinational corporations. Prerequisite: Mktg 360.

370. THE SOCIAL AND LEGAL ENVIRONMENT OF BUSINESS. 4 HOURS. The major social and legal forces that are environmental to the firm. Focus on early detection of those forces, defining their relationship to each other and to the firm, and how decision-making in the firm is affected. Prerequisite: Junior standing.

390. SPECIAL TOPICS IN MARKETING. 4 HOURS. Intensive study of selected problems. Reading assignments from scholarly and professional journals; emphasis on covering relatively few areas in great depth. Prerequisite: Business administration students must have declared a major.

399. INDEPENDENT STUDY IN MARKETING. 0 TO 12 HOURS. May be taken for a total of 12 hours. Intensive study of one or more selected topics. The topic and research methodology are determined in consultation with the instructor. Prerequisites: Major in marketing and consent of the head of the department.

Quantitative Methods

Professors: Leonard Kent, PhD, Head of the Department; Lucile Derrick, PhD (Emeritus); Brian Gluss, PhD.

Associate Professors: Edward T. Minieka, PhD; Lalitha P. Sanathanan, PhD; Walter J. Wadycki, PhD.

Assistant Professors: Sharad S. Chitgopekar, PhD; John D. Lees, PhD; Donald N. Steinnes, PhD; William M. Taylor, MS.

Instructors: James E. Hall, MS.

Lecturers: Behrooz Aghevli, BA; Majorie Fisher, BA; Jean-Margret Hynes, BA.

Recently there has been a rapid growth of a body of knowledge in which mathematics is applied to the analysis of business problems. These developments are based on techniques drawn from classical mathematics in areas such as matrix algebra, calculus, and probability theory. In addition, these developments have stimulated new types of mathematical analyses, such as linear programming, dynamic programming, theory of games, other analytical techniques usually associated with operations research, and computer science.

The Department of Quantitative Methods requires of its majors a thorough background in classical mathematics and up-to-date knowledge in operations research and computer science to enable them to bring to the business world an analytical approach to the solution of business problems. Government and other areas of public administration find a use for specialists in this area. Graduates can expect to find employment in such fields as systems analysis, computer center operation, statistical quality control, and sampling.

Required for a major in quantitative methods—36 hours distributed as follows:

Required Courses—23 hours

Quantitative Methods 369—Multivariate Analysis I
Quantitative Methods 370—Multivariate Analysis II
Quantitative Methods 371—Survey Research
Quantitative Methods 375—Systems Analysis
Quantitative Methods 376—Survey of Operations Research *or*
Quantitative Methods 360—Operations Research I
Mathematics 195—Introduction to Automatic Digital Computing

All quantitative methods majors are required to complete Mathematics 130, 131, 132, 133 or equivalent. A student who has completed Mathematics 111 and 112 before declaring a major should consult the quantitative methods adviser concerning mathematics courses required.

Elective Courses—13 hours, with departmental approval, from the following suggested courses:

Quantitative Methods 353—Business Systems Analysis I
Quantitative Methods 354—Business Systems Analysis II
Quantitative Methods 361—Operations Research II
Quantitative Methods 362—Operations Research III
Quantitative Methods 373—Analysis of Variance and Experimental Design
Quantitative Methods 377—Business Computer Technology
Quantitative Methods 378—Dynamic Programming
Quantitative Methods 380—Graph Theory
Quantitative Methods 275—Data Processing Using COBOL
Mathematics 220—Elementary Differential Equations
Mathematics 280—Problem-Oriented Languages
Mathematics 281—Assembly Language Programming
Mathematics 375—Probability
Economics 335—Econometrics

Suggested Course Schedule for Quantitative Methods

Freshman Year

First Quarter	*Hours*
Composition 101	4
Mathematics 109	3
Economics 120	4
Humanities	4
	15

Second Quarter	
Composition 102	4
Mathematics 130	5
Economics 121	4
	13

Third Quarter	
Non-business elective	4
Mathematics 131	5
Humanities	4
Humanities	4
	17

Sophomore Year

First Quarter	*Hours*
Accounting 110	4
Quantitative Methods 270	4
Social sciences	4
Mathematics 132	5
	17

Second Quarter

Accounting 111	4
Quantitative Methods 271	4
Social sciences	4
Mathematics 133	5
	17

Third Quarter

Economics 319	4
Quantitative Methods 371	4
Quantitative Methods 375	4
Business elective	4
	16

Third Quarter

Non-business elective	4
Quantitative Methods 272	4
Social sciences	4
Mathematics 195	3
	15

Senior Year

First Quarter

Quantitative Methods 376 or 360	4
Quantitative methods elective	4
Business elective	4
Free elective	4
	16

Junior Year

First Quarter

Management 340	4
Marketing 360	4
Finance 350	4
Quantitative Methods 369	4
	16

Second Quarter

Quantitative methods elective	4
Quantitative methods elective	4
Free elective	4
Free elective	4
	16

Second Quarter

Management 355	4
Marketing 370	4
Economics 318	4
Quantitative Methods 370	4
	16

Third Quarter

Quantitative methods elective	4
Non-business elective	4
Management 359	4
	12

Courses (QM)

270. STATISTICS I. 4 HOURS. The concepts of efficiently summarizing data, including some use of the computer to generate graphic and numeric summary measures. The theory of probability, random variables in one and several dimensions, and sampling from a known population as foundations for statistical inference. Prerequisite: Math 109.

271. STATISTICS II. 4 HOURS. Theory of statistical estimation and hypothesis testing. Bayesian decision theory. Specific statistical tests, including parametric and nonparametric. Prerequisite: QM 270.

272. STATISTICS III. 4 HOURS. Analysis of variance, regression, and correlation analysis. Computer applications employing these analyses. Simultaneous equations, regression extensions, and time series analysis. Prerequisite: QM 271.

275. DATA PROCESSING USING COBOL. 4 HOURS. Electronic data processing; COBOL as a programming language; applications of COBOL to industrial and governmental problems. Prerequisite: QM 272 or Math 194 or 195 or consent of the instructor.

289. COOPERATIVE BUSINESS ADMINISTRATION PRACTICE. 0 HOURS. Same as Accounting 289, Economics 289, Finance 289, Management 289, and Marketing 289. Cooperative education in a work-study program combining academic learning with firsthand experience in business practices. Prerequisites: 45 hours of credit in any field, including 15 hours at UICC, and consent of the coordinator of the cooperative plan.

345. ADVANCED ECONOMIC STATISTICS. 4 HOURS. Same as Economics 345. Probability, hypothesis testing, and estimation, with emphasis on economic applications; econometric models, multiple linear regression, and introduction to problems of estimation. Prerequisites: Math 370 and 372 or QM 272 or consent of the instructor. Business administration students must have declared a major.

353. BUSINESS SYSTEMS ANALYSIS I. 4 HOURS. Various approaches to problems involving the operations of a system from the perspective of the entire company; optimal decisions are generated for the controllers of the system. Prerequisites: Math 194 or 195, QM 272 or the equivalents or consent of the instructor. Business administration students must have declared a major.

354. BUSINESS SYSTEMS ANALYSIS II. 4 HOURS. Computer-assisted experimentation by simulation of a mathematical model of the student's design to gain insight into the performance of the system and establish causal relationships between input and output. Prerequisite: QM 353.

360. OPERATIONS RESEARCH I. 4 HOURS. May be substituted for Systems Engineering 371. Credit is not given for both Quantitative Methods 360 and Systems Engineering 371. Linear programming: simplex algorithm, duality, sensitivity testing, convex programming, parametric programming. Transportation problem: solution techniques, relationship to linear programming, assignment. Applications. Prerequisites: Math 112, QM 271 or the equivalents or consent of the instructor. Business administration students must have declared a major.

361. OPERATIONS RESEARCH II. 4 HOURS. Nonlinear operations research. Nonlinear programming: optimality conditions, convexity, heuristic methods, applications. Inventory control theory: classical models, stochastic complications. Integer programming: enumerative techniques, cutting plane techniques. Prerequisite: QM 360 or 376 or the equivalent or consent of the instructor. Business administration students must have declared a major.

362. OPERATIONS RESEARCH III. 4 HOURS. May be substituted for Systems Engineering 350. Credit is not given for both Quantitative Methods 362 and Systems Engineering 350. Stochastic optimization problems. Markov chains, queuing theory, stochastic inventory control theory, dynamic programming. Prerequisites: Math 112, QM 272 or the equivalents or consent of the instructor. Business administration students must have declared a major.

369. MULTIVARIATE ANALYSIS I. 4 HOURS. Introduction to the structure and analysis of multivariate data, using the multivariate normal model. The relevant matrix theory; multilinear regression; tests concerning multivariate means; multivariate analysis of variance. Prerequisite: QM 272 or consent of the instructor. Business administration students must have declared a major.

370. MULTIVARIATE ANALYSIS II. 4 HOURS. Multivariate techniques of data analysis in common use. Topics include principal components, factor analysis, canonical correlation, discriminant analysis classification procedures. Prerequisite: QM 369 or consent of the instructor. Business administration students must have declared a major.

371. SURVEY RESEARCH. 4 HOURS. Application of sampling theory and methods to planning, conducting, and evaluating surveys for measuring public opinion and consumer attitudes and preferences. Instruments of measurement, sample design estimation, sources of errors and bias. Case studies with application to actual situations. Prerequisite: QM 272 or the equivalent.

373. ANALYSIS OF VARIANCE AND EXPERIMENTAL DESIGN. 4 HOURS. General theory of design and analysis of experiments. Least squares estimation, multiple regression, analysis of variance, randomization, randomized blocks, Latin squares, factorial designs, replication, incomplete blocks. Prerequisite: QM 272 or consent of the instructor. Business administration students must have declared a major.

375. BUSINESS INFORMATION SYSTEMS. 4 HOURS. Design and development of computer-based information systems from a management perspective; identification and measurement, feasibility, systems implementation, and evaluation. Prerequisite: QM 272 or the equivalent or consent of the instructor. Business administration students must have declared a major.

376. SURVEY OF OPERATIONS RESEARCH. 4 HOURS. Methods, techniques, and applications; linear programming, simulation, production and inventory theory, queuing theory, game theory. Prerequisites: Math 112, QM 272. Business administration students must have declared a major.

377. BUSINESS COMPUTER TECHNOLOGY. 4 HOURS. Nonprogramming treatment of fundamental concepts of computer technology; prevalent forms of computing systems in business, including time-sharing and multiprogramming; detailed discussion of the control of the system and integration of the system with the firm's operations. Prerequisites: Math 194 or 195, QM 272 or the equivalents or consent of the instructor. Business administration students must have declared a major.

378. DYNAMIC PROGRAMMING. 4 HOURS. Theory and application to solving problems in multistage decision processes arising in a wide variety of fields, such as operations research, engineering, and mathematics. Deterministic and random processes are considered and computational and analytical methods of solution derived. Prerequisites: Math 133 and 220 or the equivalents. Business administration students must have declared a major.

380. PROBLEMS IN GRAPH THEORY. 4 HOURS. May be substituted for Systems Engineering 460. Credit is not given for both Quantitative Methods 380 and Systems Engineering 460. Same as Mathematics 380. Optimization problems: theory and solution. Shortest path problems. Transportation problems: maximum flows, dynamic flows, parametric flows. Matching problems: coverings, spanning trees, perfect graphs. Urban scheduling problems: traveling salesman problem, postman problem. Prerequisite: QM 376 or consent of the instructor.

399. INDEPENDENT STUDY IN QUANTITATIVE METHODS. 1 TO 4 HOURS. May be repeated for a total of 12 hours. Intensive study of selected topics determined in consultation with the instructor and department head. Prerequisites: Major in quantitative methods and consent of the head of the department.

College of Education

Van Cleve Morris, EdD, Dean of the College
George C. Giles, Jr., PhD, Associate Dean
Dolores I. Taylor, EdM, Assistant Dean for Student Services
Emanuel Hurwitz, Jr., PhD, Assistant Dean for Administration
David A. Wilson, MS, Assistant Dean for Operations
Joseph J. Malinchoc, EdD, Director of Secondary Student Teaching
Constance A. Shorter, EdD, Director of Field Experiences

Professors: Maurice J. Eash, EdD; Thomas E. Linton, PhD; Van Cleve Morris, EdD; Helmer Myklebust, EdD (Adjunct); David A. Page, AM; Victor E. Ricks, PhD; Harriet Talmage, PhD; Charles A. Tesconi, Jr., EdD; Herbert J. Walberg, PhD.

Associate Professors: Patricia S. Charlier, PhD; Rheta DeVries, PhD; George C. Giles, Jr., PhD; Emanuel Hurwitz, PhD; Constance K. Kamii, PhD; Eliezer Krumbein, PhD; Joseph J. Malinchoc, EdD; Julius Menacker, EdD; George E. Monroe, PhD; Arthur I. Neyhus, PhD; Susanna W. Pflaum, PhD; Elizabeth Porch, EdD; William C. Price, EdD; Madelaine T. Shalabi, PhD; Philip W. Tiemann, PhD; Donald R. Warren, PhD; Edward Wynne, EdD.

Assistant Professors: F. David Boulanger, PhD; Geraldine D. Brownlee, MST; Tanis H. Bryan, PhD; Carmen J. Carsello, PhD; Eugene H. Cramer, PhD; Robert L. Crowson, PhD; Wayne C. Fredrick, PhD; Neal J. Gordon, PhD; Marie Johnson, PhD; James V. Kahn, PhD; James R. Killen, EdD; Anna M. Larson, PhD; Dale E. Layman, PhD; Rosita O. Pengson, EdD; Suzanne Perlman, PhD; Cynthia K. Porter-Gehrie, PhD; Margaret A. Richek, PhD; Joel S. Richman, PhD; William H. Schubert, PhD; Constance A. Shorter, EdD; Aimee W. Strawn, MEd; Dorothe Weinberg, PhD; Ward W. Weldon, PhD.

Instructors: Ann W. Aldrich, BS; Helen T. Bonaros, MEd; Gloria Gibbs, MEd; Kathleen M. Gruber, MEd; Susan P. Kleinman, MS; Elsa M. Kreuzer, MEd; John Long, BA; Sheila McKenzie, BA; Henrietta H. Miller, MA; Dolores I. Taylor, MEd.

Lecturers: Bailey Bishop, BS; Patricia L. Chronis, MEd, MSW; Ruth A. Fangman, MA; Grace Hopkins, MEd; Susan R. Levy, MS; Daria Markus, MA; Mary Jo Tavormina, BA; David A. Wilson, MS.

Teaching Associates: Mary M. Schwartz, MEd.

Student Teaching Supervisors:

Secondary School. *Art:* Suzanne Cohan, MAE; Linda S. Cohn, MS. *Biology:* James A. Bond, PhD; Howard E. Buhse, Jr., PhD; Darrel L. Murray, PhD. *Chemistry:* Frances K. Seabright, MS. *Earth Science:* Robert E. Demar, PhD. *English:* Karen Corsey, MA; Louise A. Glickman, MA; Amy Lindley, MAT; Daniel Lindley, PhD. *French:* Dorothy G. Barber, MA. *Geography:* Alden Cutshall, PhD (Emeritus); Edwin H. Draine, PhD; Clifford E. Tiedemann, PhD. *German:* David M. Weible, PhD; Carol L. Creed, MA. *History:* Gerald A. Danzer, PhD; Nazaris A. DeVine, BA; Lawrence King, PhD; Muriel Moulton, MA. *Mathematics:* Irwin K. Feinstein, PhD; Julia B. Linn, MS; Kenneth H. Murphy, MS; Grace M. Nolan, MS; Helen W. Sears, MA; Avrum I. Weinzweig, PhD. *Physical Education:* Marian E. Kneer, PhD; Concetta M. Licausi, MA; Harold H. Nemoto, MA; Anna Neumann, MS; Nina K. Pappas, MS; Barbara Pulliam, MS; Philip H. Van Slooten, PED. *Physics:* Edward B. McNeil, PhD. *Spanish:* Violet E. Bergquist, DLit; Ramona Spinka, PhD. *Speech and Theater:* Harriet B. Harral, PhD.

Established to provide professional study in education, the college offers the professional courses for students preparing to teach in elementary and secondary schools, with unique opportunities for students who plan to teach in urban schools. Courses in general education and in the areas of specialization for students preparing to teach in secondary schools are administered by and taught in the various departments of the colleges. Students preparing to teach physical education enter the College of Health, Physical Education, and Recreation and those preparing to teach in the secondary schools enter the College of Liberal Arts and Sciences or the College of Architecture and Art. See *Requirements for Admission to Undergraduate Study*. The curricula for the preparation of elementary, special education, and secondary school teachers as listed in this catalog have been approved by the University, the Illinois State Certification Board, and the National Council for the Accreditation of Teacher Education.

Emphasis on Urban Education

Located as it is in the center of a great metropolis, the college is ideally situated to educate teachers for urban schools. Cooperative programs with the Chicago public schools and nearby suburban schools afford excellent opportunities for useful laboratory experiences and research. The college supports appropriate community projects and welcomes community cooperation for improvement of teacher education.

An Urban Education Research Program is administered by the College of Education at Chicago Circle in collaboration with the Urbana-Champaign College of Education and other departments and units of the University with relevant interests. Funds are employed to free faculty on both campuses to engage in research on problems of urban education and to support research expenses (graduate assistants, data collection and analysis, for example) incurred by faculty members. Several projects are also supported by grants from other sources.

The program is administered by a director whose responsibilities are to assist in the coordination of individual research projects, to recruit new faculty with interests in areas related to urban education, to establish guidelines

for the continuation and expansion of existing projects and the development of new ones, to supervise general budgetary allotments to departments, and to identify funds from non-University sources for research projects.

Special Programs

The College of Education offers these special programs:

Special Education Program—The College of Education offers programs that prepare teachers of emotionally disturbed children, children with learning disabilities, and mentally retarded children. These three sequences of courses constitute the College of Education Program in Special Education. Enrollment in this program leads to a BA and eligibility to apply for state certification, for city of Chicago certification for teaching in the elementary grades, and for certification as a teacher of exceptional children. Students apply for admission to the Special Education Program during their sophomore year and pursue studies in special education in their junior and senior years. Information may be obtained in the College of Education office. Selection of students for the program is made by the Special Education Program faculty.

Child Study Facility—The recently established UICC Child Study Facility is a multipurpose unit devoted to helping children with all types of learning and behavorial disorders. As a diagnostic facility serving the community, its primary objective is to ascertain the nature of a child's disabilities and their effects on learning and adjustment. The approach of the facility is based on interdisciplinary evaluations involving education, psychology, pediatrics, and neurology.

Early Childhood Education Program—The College of Education offers courses to prepare teachers for work with preschool children. Students enrolled in the elementary education program may take 12 or more hours of work in Early Childhood as their area of concentration and do their student teaching in a kindergarten under an Early Childhood supervisor. Information regarding new developments in this program may be obtained in the Office of Student Services.

Catholic Teacher Education Program—The College of Education in cooperation with the Archdiocese of Chicago School System offers three courses as an area of concentration for prospective Catholic school teachers. These courses provide an understanding of the history and philosophy of parochial education and are available to all teacher education majors. Students enrolled in this area of concentration will participate in supplemental activities and seminars sponsored by the Catholic student center. Those completing the area of concentration will have met the special requirements for employment in the Catholic school system.

Office of Evaluation Research

Established in 1969 in answer to the increasing demand for evaluation assistance in university, government, and school-related programs, the office

is concerned with both theoretical and applied approaches to evaluation. The research staff is mainly involved with projects that operate in urban settings.

Council on Teacher Education

The University Council on Teacher Education is responsible for coordinating teacher education programs throughout the University and for maintaining relationships with the Chicago and Illinois certification authorities. On recommendation by the University to the State Teachers Certification Board, graduates of teacher education curricula are eligible for certification in Illinois outside of Chicago. Graduates generally qualify for certification in other states and are generally eligible to take the examination for Chicago also. To be eligible for graduation and recommendation for certification a student must be enrolled in an approved program in teacher education. Graduates of curricula approved by the Council on Teacher Education are eligible for admission to the graduate college of most institutions that offer majors in the student's first or second field of specialization or in the professional areas of education.

The student who does not intend to complete the approved program in teacher education at Chicago Circle but is interested in fulfilling minimum academic requirements for Illinois certification should consult the State Teacher Certification Board, 188 West Randolph Street, Chicago, Illinois 60601; telephone, 793-2230, for information sheets titled "Instructions for Applying for Illinois Certification."

Applicants for a temporary certificate to teach in the Chicago public schools should consult the Board of Examiners, Room 1026, 228 North LaSalle Street, Chicago, Illinois 60601; telephone, 641-4141. Information regarding certification in the Chicago public schools is contained in their publication "Circular of Information."

Admission Requirements

An applicant for admission to a teacher education curriculum must meet the admission requirements of the college or department offering the chosen curriculum. A student who transfers to a teacher education curriculum of the University of Illinois at Chicago Circle from another program, college, or institution and who has completed 90 quarter hours of credit must present a grade point average of at least 3.50 (A=5.00) for admission in good standing.

Advising Program

Each student is assigned an adviser in the first field of specialization; for example, if the student plans to teach English, an adviser in the Department of English will guide the selection of courses preparatory to the teaching of English and to eligibility for certification. Elementary education students are advised by the faculty and staff of the Office of Student Services of the College of Education.

Students who desire to enter a teaching curriculum or desire to change from one teacher education curriculum to another should consult the college office in which the curriculum is administered.

Advanced-Standing Requirements

Continuation in teacher education curricula beyond the sophomore year is contingent on admission to advanced standing in teacher education, determined after the completion of 75 to 90 quarter hours of course work. The decision is based on the applicant's academic and personal qualifications.

Student Teaching

Admission to Elementary Student Teaching

A professional quarter of student teaching (including a weekly seminar) is required in the senior year of the elementary education program after the student has earned 135 or more quarter hours. The following courses, including practicums, must be completed to be eligible for student teaching:

Art 204
Education 170, 201, 210, 221, 235, 236, 237, 261
Mathematics 106, 107, 108
Music 249, 250
Physical Education 280
Speech 171

To qualify for student teaching, the student must have senior standing, a grade point average no lower than 3.50 for all course work, and the approval of the Department of Curriculum, Instruction, and Evaluation.

An application for student teaching must be made no later than the winter term preceding the academic year in which a student-teaching assignment is desired. Students are informed of application procedures during the fall and winter terms through notices read in all education courses. Students may also obtain information and required forms from the Office of the Director of Elementary School Student Teaching, 3234 Education and Communications Building.

Only those enrolled students who complete the professional sequence of the College of Education are eligible for participation in the elementary school student-teaching program that operates during the fall, winter, and spring terms. Regardless of transfer credit, a prospective student teacher must have completed a minimum of 17 quarter hours in the College of Education including Education 236, 237, and 261, 262, or 265. A candidate for a degree in elementary education must satisfactorily complete student teaching at the University of Illinois at Chicago Circle.

The director of elementary school student teaching makes assignments to be carried out on a full-time basis in selected public and nonpublic schools in Chicago and the suburbs.

Curriculum Preparatory to Teaching in Elementary Schools

For the Bachelor of Arts in Elementary Education, at least 180 quarter hours are required, distributed as follows:

	Hours
Language Arts	12
English Composition 101, 102 (8 hours)	
Speech 171—Principles of Speech Development and Correction (4 hours)	

Humanities Electives	8
English or foreign-language literature or humanities	
Social Sciences	20
American history (4 hours), Political Science 151 (4 hours), and Psychology 100 and 101 (8 hours) are required. The remaining 4 hours must be taken in the social sciences area in anthropology, criminal justice, economics, geography (except courses in physical geography), history, political science, psychology, or sociology.	
Natural Sciences and Mathematics	20
Students may select any combination of courses, for a total of 20 hours, for which they are eligible in:	
Biological sciences; Chemistry[1]; Geology; Physical geography; Mathematics[2]; Natural sciences; Physics	
Mathematics	12
Mathematics 106, 107, 108—Mathematics for Elementary Teachers	
Physical Education	4
Physical Education 280—Elementary School Physical Education Activities	
Art	4
Art 204—Art for Elementary Teachers: Studies in Creativity	
Music	8
Music 249—Music Skills and Rudiments[3]	
Music 250—Music for Elementary Teachers	
Education	51
Education 170—Educational Foundations	
Education 201—Fundamentals of Health Education for the Elementary Teacher	
Education 210—The Educative Process	
Education 221—Children's Literature	
Education 235—Curriculum, Instruction, and Evaluation I	
Education 236—Curriculum, Instruction, and Evaluation II	
Education 237—Curriculum, Instruction, and Evaluation III	
Education 261—Fundamentals of Reading Instruction	
Education 270—Educational Practice with Seminar I	
Education 271—Educational Practice with Seminar II	
Areas of Concentration	12
At least 12 hours of courses in an area of concentration, exclusive of required courses. The adviser must approve the area of concentration.	
General Electives	29
Total	180

1. Chemistry 110, 111, and 132 do not fulfill this requirement.

2. Mathematics 100, 101, 104, 105, 106, 107, 108, 115, 116, 117 do not fulfill this requirement. Mathematics 170, 171, 172 credit is allowed only for Educational Assistance Program students.

3. A proficiency examination in Music 249 (prerequisite for Music 250) is given by the Department of Music in the fourth week of each term. Arrangements for this test are made with the department office.

Admission to Secondary School Student Teaching

A candidate for certification in secondary school education must complete Education 170, 210, 230 (or an alternative course in secondary school curriculum and instruction), and 250 preparatory to student teaching. In ad-

dition, the requirements of the chosen college or department must be fulfilled. It is recommended that student teaching be completed during the next-to-last term of the student's program; however, if the next-to-last term is the summer term, student teaching is completed during the final term. For a degree in secondary school teacher education and eligibility for certification, student teaching must be completed satisfactorily at UICC.

Application for secondary school student teaching must be made during the winter term of the academic year preceding the student teaching experience. Orientation meetings organized by the director of secondary school student teaching are held early in the winter term to clarify application and other procedures. The time and place of orientation meetings are announced during the fall and winter terms.

Full-time student teaching assignments to appropriate secondary schools in Chicago and the suburbs are made for those students who have been admitted to advanced standing in teacher education and who have also met the requirements of the individual departments. During the student-teaching term the student attends a weekly seminar held on campus.

Curricula Preparatory to Teaching in Secondary Schools

The student who seeks a degree and certification for teaching at the secondary level may have *two* teaching specializations. The curricula in teacher education provide for the development of the major field of specialization; the minor specialization, if required for a degree, should be selected from the following list of major fields of specialization. See section on teacher education curricula.

Fields of Specialization

The total hours required are exclusive of those in basic military science and formerly required physical education.

Field	*Degree*	*General Education*	*Major*	*Minor*	*Education*	*Electives*	*Total Hours*
Art[4]	BA	58	60	—	32	—	195
Biology	BS	40-52	48	33	32	0-14	195
Chemistry	BS	32-56	53	34-42	32	0-29	180
Earth Sciences	BA	32-64	46-52	39-40	32	0-31	180
English	BA	52-76	48	32	32	0-18	180
French	BA	54	54	20	32	25-31	180
Geography	BS	40-64	48	36	32	10-34	180
German	BA	40	48	—	32	60	180
History	BA	48-72	48	—	32	28-52	180
Mathematics	BS	52-76	57	30	32	5-19	180
Physical Education[5]	BS	50	75-77	—	28	31-41	186-194
Physics	BS	37	47	31	32	2-22	180
Russian	BA	52	48-72	32	32	28	184
Sociology	BA	52-76	48	—	32	0-22	180
Spanish	BA	52	49	30	32	28-34	180
Speech	BA	52-76	48	30	32	0-22	180

4. Total hours include 45 in the foundation program. The field of specialization in art is administered by the Department of Art.

5. Physical education is administered by the College of Health, Physical Education, and Recreation.

Courses (Ed)

Note: Classroom observation and/or related field experience in the public schools is required of all students enrolled in each education course.

170. EDUCATION POLICY FOUNDATIONS. 4 HOURS. Social, cultural, and intellectual forces that influence and shape education policy. The effects of education policy in the learning process.

171. RELIGION AND EDUCATION: CATHOLICISM. 0 TO 4 HOURS. Same as Religious Studies 171. The policy and legal guidelines governing the teaching of religion in the schools and a survey of the principal teachings of Roman Catholicism.

180. INTRODUCTION TO SPECIAL EDUCATION. 4 HOURS. Introduction to exceptional children (retarded, learning disabled, blind, deaf, physically handicapped, speech handicapped, socially maladjusted, emotionally disturbed, gifted); behavioral, medical, and cognitive characteristics. Educational goals and programs. Prerequisite: Sophomore standing.

200. INTRODUCTION TO NATIVE AMERICAN EDUCATION. 4 HOURS. Same as Native American Studies 200. History of contemporary issues in Native American education in the United States. Prerequisite: NASt 152 or consent of the instructor.

201. FUNDAMENTALS OF HEALTH EDUCATION FOR THE ELEMENTARY SCHOOL TEACHER. 4 HOURS. The procedures and techniques for meeting the health needs and health education of the elementary school child; emphasis on health screening and appraisal, consumer awareness, communicable diseases, and selected mental health topics, such as drugs, alcohol, tensions, and adjustment.

202. HEALTH OF PRESCHOOL CHILDREN. 4 HOURS. Prenatal and postnatal care of both mother and child; the health needs of new families and their preschool children; growth and development, common diseases, nutrition, resources, and means of access to health services. Prerequisites: Junior standing and Ed 201 or 205 or enrollment in the Early Childhood Education Program.

205. FUNDAMENTALS OF HEALTH EDUCATION FOR PHYSICAL EDUCATION TEACHERS. 4 HOURS. Preparation in health education subject matter, methods, and special health counseling. Selected topics: human sexuality and the family; mental health in the schools; behavior involving drugs and alcohol; consumer health protection.

206. MAJOR DECISIONS IN EDUCATION POLICY. 4 HOURS. Major policy decisions in American education, including the critical social forces that influenced them and the impact of each decision on the current status of education policy. Field work is required. Prerequisite: Ed 170 or the equivalent.

207. EDUCATION POLICY IN SOCIAL CONTEXT. 4 HOURS. Significant decisions and trends in areas indirectly related to education that have had a major impact on school and education policy. Emphasis on the effects of labor and industry, population growth and mobility, technology, the Cold War, and the human rights movement on education policy. Field work is required. Prerequisite: Ed 206.

208. CONTEMPORARY EDUCATION POLICY. Current issues and problems in the formation of education policy. Focus on policy implications of conflicts over equal education opportunity, school accountability, and community control of public schools. Field work is required. Prerequisite: Ed 207.

209. POLICY-MAKING INSTITUTIONS. 4 HOURS. The effects on education policy of federal, state, regional, and municipal government agencies, their interrelationships, and the social and cultural forces that influence them. Field work is required. Prerequisite: Ed 208.

210. THE EDUCATIVE PROCESS. 4 HOURS. An interdisciplinary study of the biosocial and psychological factors that influence learning processes; application of behavioral sciences to understanding the individual learner in the educative process.

211. CHILD LANGUAGE AND EDUCATION. 4 HOURS. Educational implications of language development. The link between theories of language development and educational assessments and programs; special reference to teacher expectations, sociocultural factors, and the sociolinguistic milieu of the classroom.

212. CHILD DEVELOPMENT AND THE SCHOOLS. 4 HOURS. Basic principles of physical, social, and cognitive development in children. Emphasis on the use of knowledge of child development to guide educational planning at the individual, classroom, and school system levels.

221. CHILDREN'S LITERATURE. 4 HOURS. Survey from the seventeenth century to the present. Emphasis on the classics and present-day literature; methods of selection; using literature with children. Prerequisites: For elementary education majors, Ed 235, 261, concurrent enrollment in Ed 236, and consent of the instructor; others, approval of the department.

223. EMOTIONAL DEVELOPMENT IN EARLY EDUCATION. 4 HOURS. Introduction to the dynamics of development in early childhood, including an intensive child study project. Prerequisite: Consent of the instructor.

224. PIAGET'S THEORY AND EARLY EDUCATION. 4 HOURS. Introduction to basic concepts in Piaget's theory relevant to early education. The pedagogical implications are drawn in terms of principles of teaching in the classroom. Students interview preschool children using Piagetian tasks. Prerequisite: Ed 210.

226. EARLY CHILDHOOD CURRICULUM METHODS I. 5 HOURS. Planning activities in relation to educational objectives; establishing the physical and psychological environment for children's development; storytelling and children's literature; physical knowledge activities (science). Each student acts as an assistant teacher in a selected classroom for one-half day per week under the supervision of the head teacher and a sponsoring faculty member. Course work is closely integrated with the classroom work. Prerequisite: Ed 210.

227. EARLY CHILDHOOD CURRICULUM METHODS II. 5 HOURS. Planning activities in relation to educational objectives; use of music, movement, rhythmics, outdoor activities, premathematics activities, field trip experiences, and food as instructional material. Each student acts as an assistant teacher in a selected classroom one-half day per week under the supervisior of the head teacher and a sponsoring faculty member. Course work is closely integrated with the classroom work. Prerequisites: Ed 224, 226.

228. EARLY CHILDHOOD CURRICULUM METHODS III. 5 HOURS. Planning activities in relation to educational objectives; use of group games, art, and fantasy and sociodramatic play. Each student acts as an assistant teacher in a selected classroom for one-half day per week under the supervision of the head teacher and a sponsoring faculty member. Course work is closely integrated with the classroom work. Prerequisite: Ed 227.

230. CURRICULUM AND INSTRUCTION IN THE SECONDARY SCHOOL. 4 HOURS. Basic principles of curriculum development, organization of learning experiences, the basic concepts of teaching. Application of the principles prepares students for responsibilities in curriculum planning and classroom instruction in their fields of specialization. Prerequisite: Ed 210.

231. MODELS OF METROPOLITAN HIGH SCHOOLS. 4 HOURS. Note: One of Education 231, 232, 233 may be taken in lieu of Education 230. Five selected secondary schools in the metropolitan Chicago area, representing different models of secondary education, are analyzed on six constructs. Comparisons of these models are based on data gathered from on-site visits. One scheduled day per week must be open for school visits. Prerequisites: Ed 210 and concurrent registration in Ed 250 or consent of the instructor.

232. HUMANISTIC APPROACHES TO SECONDARY EDUCATION. 4 HOURS. Note: One of Education 231, 232, 233 may be taken in lieu of Education 230. A man-centered, affective approach to curriculum and instruction for prospective high school and junior high school teachers; emphasis on the humanities. Uses of the humanities as motivational and growth elements in teaching secondary school students. Prerequisite: Ed 210.

233. SOCIAL INQUIRY IN SECONDARY EDUCATION. 4 HOURS. Note: One of Education 231, 232, 233 may be taken in lieu of Education 230. An interdisciplinary approach to classroom strategies used in the teaching of controversial issues. Classroom forums that create a climate for social analysis of controversial topics are stressed. Prerequisite: Ed 210.

234. CURRICULUM AND EVALUATION THEORY. 4 HOURS. For students who are not seeking state certification in elementary education. Survey of curriculum and evaluation theory basic to the study of education: educational goals, organizational design, implementation, and assessment. Prerequisite: Ed 170.

235. CURRICULUM, INSTRUCTION, AND EVALUATION I. 5 HOURS. Active investigation of the general dynamics of curriculum development at the elementary school level; special emphasis on research and synthesis in developing and coordinating the classroom experience. Practicum required. Prerequisites: Ed 170, 210, concurrent registration in Ed 261, and consent of the instructor.

236. CURRICULUM, INSTRUCTION, AND EVALUATION II. 5 HOURS. Development of the topics and concepts introduced in Education 235. Investigation and practicum. Designs for instruction in elementary schools; emphasis on social studies. Practicum required. Prerequisites: Ed 235, concurrent registration in Ed 221, and consent of the instructor.

237. CURRICULUM, INSTRUCTION, AND EVALUATION III. 5 HOURS. Amplification of the topics and concepts developed in Education 235 and 236. Investigation and practicum in elementary schools; emphasis on science and communications. Prerequisites: Ed 236 and consent of the instructor. Concurrent registration in Ed 262 is suggested.

241. BICULTURAL EDUCATION: SPANISH-SPEAKING. 4 HOURS. Same as Latin American Studies 241. Sociology of how people who have experienced discrimination learn; psychology and sociology of racial prejudice; the industrial city and minority groups; subculture and contraculture and their relationship to the educative process.

242. BICULTURAL EDUCATION: COMPARATIVE STUDY. 4 HOURS. Same as Latin American Studies 242. Cultural matrix of the bilingual child. Comparative study of Mexican-American, Puerto Rican, and United States cultural patterns of family, stratum and status, role of the teacher, and verbal and nonverbal communication.

243. CULTURAL MATRIXES OF THE SPANISH-SPEAKING CHILD. 4 HOURS. Same as Latin American Studies 243. One-term survey of Puerto Rican cultural patterns; special attention to the formation of Puerto Rican culture. The colonial heritage of Spanish and indigenous societies in the formation of modern Puerto Rico. Special attention to Puerto Rican institutional development in its relationship to the forces that determine a national character throughout the Hispanic colonial world; the relevance of the resulting institution is stressed. Prerequisite: Proficiency in Spanish.

244. PUERTO RICO: SOCIAL CHARACTER AND SOCIAL STRUCTURE FOR EDUCATORS. 8 HOURS. Same as Latin American Studies 244. Intensive study of the cultural vectors determining the character and the history of the Puerto Rican people; emphasis on the interrelationship between culture and education. Prerequisite: Proficiency in Spanish.

245. CREATIVE TEACHING IN ELEMENTARY SCHOOLS. 4 HOURS. Exploration of the principles and processes of creativity; emphasis on implications and applications for creative teaching. A creative approach to curriculum planning; content of curriculum areas, teaching, and learning are stressed. Prerequisites: Ed 221, 235, Art 204, Mus 250, and PE 280.

247. CURRICULUM FOR BILINGUAL-BICULTURAL TEACHERS. 4 HOURS. A sociocultural examination of the problems of the Spanish-speaking migrant as they relate to present curriculum issues. Emphasis on a critical evaluation of present curricular practices and their impact on the Spanish child in urban schools. Prerequisites: Ed 242, 243.

248. HISTORY OF SPANISH-SPEAKING MINORITY GROUPS FOR URBAN EDUCATORS. 4 HOURS. Same as Latin American Studies 248. A one-term survey of the historical roots of the educational experiences and attitudes of Spanish-speaking minority groups. Prerequisite: Junior standing.

249. GEOGRAPHICAL ORIGINS OF SPANISH-SPEAKING MINORITY GROUPS IN URBAN EDUCATION. 4 HOURS. Same as Latin American Studies 249. A one-term survey of Latin American educational patterns as they affect the urban school experiences of Spanish-speaking minority groups. A comparison of the American Indian and the Mediterranean attitudes toward school participation, especially in urban schools of the United States. Prerequisite: Junior standing.

250. EDUCATIONAL EVALUATION. 4 HOURS. Theories and methods; the assessment of individuals, groups, and educational institutions in the attainment of educational objectives. Prerequisite: Credit or concurrent registration in Ed 230, 235, or 246.

251. CATHOLIC SCHOOL POLICIES. 0 TO 4 HOURS. Same as Religious Studies 251. The educational policies and underlying philosophies of the Roman Catholic school system in the United States and within the archdiocese of Chicago in particular. The goals and objectives of religious education. Prerequisite: Ed 171.

261. FUNDAMENTALS OF READING INSTRUCTION. 4 HOURS. The effect of language and experience on reading instruction; the developmental nature of the acquisition of reading skills; use of the directed reading lesson. Prerequisites: For elementary education majors, completion of core courses, concurrent registration in Ed 235, and approval of the department; others, Ed 170, 210, and approval of the department.

262. IMPROVING READING IN THE PRIMARY GRADES. 4 HOURS. In-depth study of readiness and beginning reading, relationship of reading to child development, and development of decoding skills. Ten hours of supervised field experience are included. Prerequisites: Ed 261 and consent of the instructor. Concurrent registration in Ed 237 is suggested for College of Education majors.

264. READING IN THE CONTENT AREAS. 4 HOURS. Reading skills; their development and use in the content areas of secondary schools.

265. IMPROVING READING IN THE UPPER GRADES AND HIGH SCHOOL. 4 HOURS. Comprehension and thinking as taught by artful questioning; the relationship of study skills and reading to the content areas of the school curriculum. Prerequisite: Ed 261.

270. EDUCATIONAL PRACTICE WITH SEMINAR I. 8 HOURS. Same as Art-Design 284, French 270, Geography 270, German 270, Physical Education 270, Slavic Languages and Literatures 270, Sociology 290, Spanish 270, and Speech and Theater 270. The first half of a two-segment sequence of practice teaching, including seminar, to meet certification requirements for teaching in the elementary or secondary school. Prerequisites: Ed 250, admission to advanced standing, and recommendation of the department of specialization.

271. EDUCATIONAL PRACTICE WITH SEMINAR II. 8 HOURS. Same as Art-Design 285, French 271, Geography 271, German 217, Physical Education 271, Slavic Languages and Literatures 271, Sociology 291, Spanish 271, and Speech and Theater 271. The second half of a two-segment sequence of practice teaching, including seminar, to meet certification requirements for teaching in the elementary or secondary school. Prerequisites: Ed 250, credit or concurrent registration in Ed 270, admission to or continuation of advanced standing, and recommendation of the department of specialization.

272. EDUCATIONAL PRACTICE WITH SEMINAR—URBAN TEACHER EDUCATION I. 5 HOURS. Restricted to students in innovative urban teacher education programs. The first part of a three-term professional laboratory sequence, including practice teaching with seminar, to meet certification requirements for teaching in the elementary or secondary school. Prerequisites: Ed 250, recommendation of the department of specialization, and approval of the personnel committee of the teacher education project involved.

273. EDUCATIONAL PRACTICE WITH SEMINAR—URBAN TEACHER EDUCATION II. 5 HOURS. Restricted to students in innovative urban teacher education programs. The second part of a three-quarter professional laboratory sequence, including practice teaching with seminar, to meet certification

requirements for teaching in the elementary or secondary school. Prerequisites: Ed 272 and approval of the personnel committee of the teacher education project involved.

274. EDUCATIONAL PRACTICE WITH SEMINAR—URBAN TEACHER EDUCATION III. 6 HOURS. Restricted to students in innovative urban teacher education programs. The third part of a three-term professional laboratory sequence, including practice teaching with seminar, to meet certification requirements for teaching in the elementary or secondary school. Prerequisites: Ed 273 and approval of the personnel committee of the teacher education project involved.

275. EDUCATION POLICY INTERNSHIP. 8 TO 16 HOURS. May be repeated for up to 24 hours of credit. For education policy students. Analysis of policy-making procedures, organization, objectives, service delivery effectiveness, and treatment of clients and constituents at a field site. Joint supervision by faculty and field site personnel. Prerequisite: Ed 209.

276. RESEARCH METHODS IN EDUCATION POLICY. 4 HOURS. Survey of principal quantitative and nonquantitative research methods in education policy and the impact of research on policy formation. Field work is required. Prerequisites: Ed 275 and 4 hours of research methods in one of the social sciences.

277. RESEARCH DESIGN IN EDUCATION POLICY. 4 HOURS. Selected designs. Formulation of researchable problems; designing a research project; identifying procedures and techniques appropriate to objectives. Field work is required. Prerequisite: Ed 276.

278. EDUCATION POLICY RESEARCH. 4 HOURS. The implementation of student-designed education policy research projects; analysis and presentation of findings. Field work is required. Prerequisite: Ed 277.

280. SURVEY OF CHARACTERISTICS AND EDUCATION OF EXCEPTIONAL CHILDREN. 4 HOURS. Seminar and observations on the physical, mental, emotional, and social characteristics of exceptional children (blind, deaf, mentally retarded, learning disabled, speech impaired, orthopedically handicapped, gifted). Prerequisites: Soc 100, Ed 210, and consent of the instructor.

281. GENERAL INTERVENTION METHODS FOR BEHAVIOR MANAGEMENT. 4 HOURS. Environmental factors and their relation to academic and social development. Prerequisites: Ed 180 and admission to the Special Education Program.

282. DIAGNOSTIC METHODS FOR EXCEPTIONAL CHILDREN. 4 HOURS. Theory and methods for differential diagnosis of behavioral and learning disorders in children. Emphasis on educational interpretations (prescriptive teaching programs) of such diagnostic methods. Participation in clinical evaluation of children is part of the laboratory practicum. Prerequisites: Ed 180 and admission to the Special Education Program.

283. COGNITIVE PROCESSES OF EXCEPTIONAL CHILDREN. 4 HOURS. Introduction to cognitive processes and the effects of handicaps on those processes. Exceptionalities include mental retardation, learning disabilities, sensory deprivation, emotional disturbances, and giftedness. Prerequisite: Ed 180 or consent of the instructor.

284. INTRODUCTION TO THE EDUCATION OF THE HEARING IMPAIRED. 4 HOURS. History and survey of the education of the deaf and hard of hearing; causes and effects of different types of hearing impairment. The role of other professionals and of the educator of the hearing impaired. Prerequisite: Ed 180.

286. EDUCATION AND THE CULTURE OF REVOLUTION. 4 HOURS. Historical and social philosophical analysis of the ways schools reflect, support, and perpetuate the values, drives, and organizational imperatives of American society. Emphasis on their contributions (intended and unintended) to the radicalization of youth and minorities. Prerequisite: Sophomore standing.

290. CHARACTERISTICS OF CHILDREN WITH SPECIAL LEARNING DISABILITIES. 5 HOURS. Clinic-workshop investigation of the significant psychological, educational, environmental, and medical correlates of special learning disabilities. Definitions, terminology, prevalence, characteristics, theories, and organizational structures. Prerequisite: Ed 282.

291. METHODS OF TEACHING CHILDREN WITH SPECIAL LEARNING DISABILITIES. 5 HOURS. Clinic-workshop investigation of diagnostic-remedial methods and their implementation in the special program for learning-disabled children. Analysis and synthesis of multidisciplinary research in the development and practice of a scientific pedagogy for special learning disabilities. Prerequisite: Ed 290.

292. SPECIAL EDUCATION PRACTICUM—LEARNING DISABILITY. 16 HOURS. Full-time practice teaching in a special education program that involves children who have learning disabilities; a weekly seminar focuses on the problems that occur while working with these students. Prerequisite: Ed 291.

293. SPECIAL EDUCATION PRACTICUM—MENTAL RETARDATION. 16 HOURS. Full-time practice teaching in a special education program that involves children who are mentally retarded; a weekly seminar focuses on the problems that occur while working with these students. Prerequisite: Ed 295.

294. CHARACTERISTICS OF THE MENTALLY RETARDED CHILD. 5 HOURS. Definitions, characteristics, classifications, etiology and syndromes, diagnosis and theoretical approaches, rehabilitation procedures, and educational implications. Laboratory practice is required. Prerequisites: Ed 282 and consent of the instructor.

295. METHODS OF TEACHING THE EDUCABLE MENTALLY HANDICAPPED CHILD. 5 HOURS. Curriculum development; diagnostic procedures; educational materials, methods, and techniques. Clinical practice in administering, interpreting, and evaluating diagnostic techniques is required. Prerequisite: Ed 294.

296. SPECIAL EDUCATION PRACTICUM—EMOTIONALLY DISTURBED CHILD. 16 HOURS. Full-time practice teaching in a special education program that involves children who are emotionally disturbed; a weekly seminar focuses on the problems that occur while working with these students. Prerequisite: Ed 298.

297. PSYCHOLOGY OF THE MALADJUSTED CHILD. 5 HOURS. A clinical course combining field experiences, seminar activities, and lectures. Aspects of educational and psychological diagnosis of emotionally disturbed children served at the elementary school level; translating diagnostic materials into educational goals. Prerequisite: Ed 282.

298. CLASSROOM MANAGEMENT AND REMEDIAL INTERVENTION FOR THE EMOTIONALLY DISTURBED CHILD. 5 HOURS. A clinical course utilizing field experiences, seminars, and lecture formats. Task and maintenance functions in the classroom, including methods, techniques, and materials used in teaching emotionally disturbed children. Individual and group management problems in the classroom. Prerequisite: Ed 297.

299. INDEPENDENT STUDY PROGRAM. 1 TO 4 HOURS. For students who wish to do independent study on specific educational processes or independently to carry on projects related to education or extensive reading assignments. Prerequisite: A written proposal for faculty approval.

300. ISSUES IN URBAN EDUCATION POLICY AND PLANNING. 4 HOURS. Same as Urban Planning and Policy 300. Major areas of conflict—such as race and ethnic relations, school governance, equality of opportunity, teacher bargaining, neighborhood control—that affect education in metropolitan areas. Emphasis on an understanding of the historical background and the current status of the selected issues and their implications for education policy and planning. Prerequisite: Consent of the instructor.

301. EDUCATIONAL POLICY IN URBAN AMERICA. 4 HOURS. Examination of selected urban phenomena in relation to educational bureaucracies and school socialization processes. Emphasis on historical investigation of strategies for protest and change employed by ghetto populations; conditions that fostered these strategies; responses of schools and other target institutions; social philosophical analysis of ideologies supporting both protest and response.

302. PHILOSOPHY OF EDUCATION AND URBAN SCHOOL POLICY. 4 HOURS. Same as Urban Planning and Policy 302. Systematic exploration of selected educational theories and philosophies; particular emphasis on their impact on the problems of formulating urban educational policy. Areas of special concern: serving pluralistic interests, curriculum design, school organization, and school control.

303. POLICY ISSUES IN THE HISTORY OF AMERICAN EDUCATION. 4 HOURS. Same as Urban Planning and Policy 303. A topical analysis of political, economic, and cultural influences shaping the development of American education policy; primary attention to issues of education theory and practice in their historical settings.

304. PRACTICUM IN EARLY CHILDHOOD EDUCATION. 4 HOURS. Field placement in a child development center under the supervision of an approved qualified teacher. Experience in planning activities, evaluating the developmental progress of the children, and methods of child management. Weekly seminars to discuss the work. Prerequisite: Ed 210 or 250 or Psch 220.

305. EDUCATION POLICY FOR CITIZENS. 4 HOURS. Same as Social Work 305. The concepts and information that all citizens need to participate effectively as education consumers and policy affecters. History, economics, basic statistics, sociology, research, and current and future trends affecting American education at all levels. Prerequisite: Consent of the instructor.

306. THE POLITICS OF URBAN EDUCATION. 4 HOURS. Same as Political Science 340 and Urban Planning and Policy 306. Relations between school governance and urban politics. Particular attention to the role of educational interest groups, the school board, professional educators, citizens, and civic leaders in the formulation of educational policy. Prerequisite: Consent of the instructor.

307. ALTERNATIVE EDUCATIONAL SYSTEMS. 4 HOURS. Same as Urban Planning and Policy 307. Selected systems within and outside the public school system. Emphasis on origins, nature, and potential eventualities, including impact on the public schools. Prerequisite: Consent of the instructor.

310. SURVEY OF CHARACTERISTICS OF EXCEPTIONAL CHILDREN. 4 HOURS. Development and organization of special education programs for children who have learning disabilities, emotional behavior disorders, or impaired hearing, or who are educationally mentally retarded. Screening techniques, referral processes, educational objectives, and program structure. Prerequisite: Ed 321.

311. INTRODUCTION TO CHILDREN WITH LEARNING DISABILITIES 4 HOURS. Principal theories of learning and language disorders, language development, remediation of learning and language deficiencies, and the utilization of various communication techniques in the remedial education process. Prerequisites: Ed 310 and consent of the instructor.

312. EDUCATIONAL METHODS FOR CHILDREN WITH LEARNING DISABILITIES. 4 HOURS. Development of educational programs related to specific learning disabilities, including instructional methods and materials. Prerequisite: Ed 311.

313. INTRODUCTION TO MENTAL RETARDATION. 4 HOURS. The nature, characteristics, and educational implications for the cognitive, social, and physical development of the retarded child in the educational setting. Prerequisites: Ed 310 and consent of the instructor.

314. METHODS OF INSTRUCTION FOR THE EDUCABLE MENTALLY RETARDED. 4 HOURS. The organization and content of public school programs; emphasis on selecting, developing, and adapting teaching materials and techniques. Principles of parent counseling; survey of community services. Prerequisite: Ed 313.

315. EDUCATIONAL DEVELOPMENT AND PROGRAM PLANNING FOR THE EMOTIONALLY DISTURBED AND SOCIALLY MALADJUSTED CHILD. 4 HOURS. The nature, characteristics, and educational implications for cognitive, social, and physical development within the school setting. Prerequisites: Ed 310 and consent of the instructor.

316. METHODS OF TEACHING THE DISTURBED AND MALADJUSTED CHILD. 4 HOURS. Specific behavioral management techniques for classroom use. Development of curriculum, methods, and materials appropriate for disturbed children in an educational setting. Prerequisite: Ed 315.

317. LANGUAGE CONCEPTS FOR THE HEARING-IMPAIRED INTERMEDIATE AND SECONDARY STUDENT. 5 HOURS. Theoretical and educational aspects of language and language concepts utilized at the intermediate and high school levels. Prerequisite: Consent of the instructor.

318. DRUG EDUCATION FOR EDUCATORS. 4 HOURS. Background information, methods, and materials for teaching drug education and working with faculty, students, and parents in drug-related problems. Prerequisite: Consent of the instructor.

319. CLINICAL EXPERIENCE IN REMEDIAL TEACHING. 4 HOURS. Demonstrations by students of the ability to diagnose, prescribe, and develop a remedi-

al program. Utilization of educational clinic and field internship experience with handicapped children in an educational setting. Prerequisites: Acceptance in advanced-level special education courses and consent of the instructor.

320. SOCIAL DEVELOPMENT OF URBAN CHILDREN. 4 HOURS. The general principles of social learning and socialization during childhood and the factors common to urban children that illustrate and modify these principles. Classroom observation and interviewing of children are required. Prerequisite: Psch 220 or the equivalent by consent of the instructor.

321. ADVANCED EDUCATIONAL PSYCHOLOGY. 4 HOURS. Psychological theories and principles of learning as they apply to the teaching-learning process; particular attention to the investigation of central concepts of the psychology of learning in the urban classroom. Prerequisites: Ed 210, 250.

322. ADVANCED DEVELOPMENTAL PSYCHOLOGY AND EDUCATIONAL PROCESSES. 4 HOURS. Same as Psychology 322. Normal growth stages in language, physical growth, cognitive development, and social behavior from birth through adolescence; their relationship to major theories and to educational planning and practice. Prerequisites: Psch 101 and any one of Ed 210, Psch 220, or Psch 224.

323. CURRICULA IN EARLY CHILDHOOD EDUCATION. 4 HOURS. Survey of curricula in the field of early childhood education; special emphasis on underlying theoretical rationale pertaining to the nature and course of child development and learning. The problem of criteria for evaluating differential effectiveness. Prerequisite: Ed 224 or consent of the instructor.

324. DIFFERENTIAL DIAGNOSIS OF LEARNING AND BEHAVIOR PROBLEMS. 4 HOURS. Characteristics of children with learning and behavioral problems. Theoretical basis for diagnosis and remediation of learning and behavior disorders. Prerequisites: Ed 310 and consent of the instructor.

325. BEHAVIORAL MANAGEMENT THEORY AND TECHNIQUE. 4 HOURS. Utilization of behavior modification training and applied techniques in classroom management in the education of children with learning and behavior difficulties. Prerequisite: Ed 310.

326. PRESCRIPTIVE AND REMEDIAL TEACHING IN SPECIAL EDUCATION. 4 HOURS. Various techniques for the remediation of learning and behavioral problems; application of these methods to a wide variety of school learning and behavior problems. Demonstrations by students of their ability to assess and plan successful remedial programs for individual children. Prerequisites: Ed 324 and 325 or consent of the instructor.

327. ART MEDIA AND THEIR UTILIZATION WITH THE HANDICAPPED CHILD. 4 HOURS. Theoretical basis for utilization of art media with the handicapped. Student demonstrations of specific art media competencies in an applied setting with handicapped children. Prerequisite: Ed 326 or consent of the instructor.

328. PERCEPTUAL MOTOR EDUCATION AND THE HANDICAPPED CHILD. 4 HOURS. The interaction between the exceptional child's learning abilities and perceptual motor development and skills. Seminar; student demonstrations of specific physical education and recreation competencies. Prerequisite: Ed 326 or consent of the instructor.

329. THE THEORY OF JEAN PIAGET. 4 HOURS. Same as Psychology 329. Jean Piaget's genetic theory of the development of knowledge. His studies of cognitive development in children, especially his views on memory, learning, and intelligence. Educational implications. Prerequisite: Psch 101 and either Ed 210 or Psch 220.

330. CURRICULUM, INSTRUCTION, AND EVALUATION IN URBAN EDUCATION I. 4 HOURS. A laboratory-discussion course; emphasizes the changing role of education in urban society and the implications of changes on curriculum decision-making, design, instruction, and evaluation. Prerequisite: One methods course.

331. IMPROVING LEARNING ENVIRONMENTS. 4 HOURS. Development of the basic skills and the understanding necessary to bring about productive changes in a school system; the skills are developed in conjunction with a plan for improving a specific learning environment. The consequences of change in the school as a social system. Prerequisite: One methods course.

332. ISSUES IN SECONDARY CURRICULUM. 4 HOURS. Analysis of selected issues; investigation of viewpoints in related literature; field investigations when pertinent. Specialists are invited. Prerequisite: Ed 230 or a methods course offered in the student's major department.

333. TOPICS IN CURRICULUM, INSTRUCTION, AND EVALUATION. 1 TO 12 HOURS. May be repeated for up to 12 hours of credit. Workshop in selected topics; special application to classroom organization and instruction. Each topic is announced at the time the class is scheduled. Prerequisite: Classroom teaching experience.

335. EDUCATIONAL SUPERVISION: THEORY AND PRACTICE. 4 HOURS. Theory and practice of existing and emerging models of supervision are examined in terms of supervisory roles, interpersonal relationships, evaluation of supervision, and skills in collecting, analyzing, and sharing current practices. Prerequisite: Ed 330 or 331 or consent of the instructor.

341. CURRICULUM METHODS AND MATERIALS FOR THE TRAINABLE MENTALLY HANDICAPPED. 4 HOURS. Appropriate curriculum, instructional methods, and materials; behavioral and academic objectives; instructional theory and techniques. Prerequisite: Ed 313.

342. DEVELOPMENT AND DISORDERS OF LANGUAGE. 4 HOURS. Principal theories of learning and language disorders, language development, remediation of learning and language deficiencies, and the utilization of various communication techniques in the remedial education process. Prerequisite: Ed 291 or 341.

343. TEACHING LANGUAGE TO THE DEAF. 4 HOURS. Methods for developing language competencies in preschool- and elementary school-age hearing-impaired children. Prerequisite: Spch 171 or Ed 211 or the equivalent.

349. HISTORY AND PHILOSOPHY OF EARLY CHILDHOOD EDUCATION. 4 HOURS. The history and philosophical foundations underlying current thought and practice; emphasis on the effects of changing values, views of human development, and economic, political, and social conditions. Prerequisite: Ed 210.

350. GUIDANCE IN EARLY CHILDHOOD. 4 HOURS. For teachers of young children. Introduction to the principles and methods of guidance and counseling of young children and their families. Prerequisites: Ed 212 and consent of the instructor.

353. TOPICS IN EDUCATION POLICY. 1 TO 12 HOURS. May be repeated for up to 12 hours. Workshop; emphasis on issues related to school organization, control, and community relations. Topics are announced at the time the class is scheduled.

354. TEACHING READING TO THE DEAF. 4 HOURS. The relationship between reading and prelingual deafness. Evaluation of linguistic and experimental readiness for beginning reading; the development of appropriate techniques for differential instruction with the deaf, including selection of appropriate texts and the preparation of materials. Prerequisites: Ed 261, 343.

355. TEACHING SPEECH TO THE DEAF. 4 HOURS. Methods for developing and maintaining intelligible speech in children with moderate to profound hearing impairments; the use of electronic aids for developing auditory and motor phonetics; cybernetic mechanisms. Prerequisite: Ed 343.

356. TEACHING COMMUNICATION TO THE DEAF. 8 HOURS. Prescriptive methods for developing viable communication skills with the deaf. Techniques for utilization of residual hearing through group and individual amplification. Laboratory and practicum experience in speechreading, the language of signs, and total communication. Prerequisite: Credit or concurrent registration in Ed 355.

358. GUIDANCE FOR THE HEARING IMPAIRED. 4 HOURS. Survey of guidance theories and practices; their application to the hearing impaired and their families. Prerequisite: Ed 310 or the equivalent.

360. DIFFERENTIATED READING INSTRUCTION. 4 HOURS. Measurement of language and reading strengths; diagnosis of weaknesses; development of materials and techniques to individualize reading instruction to remediate and enrich. Prerequisites: Ed 262 or 265 or the equivalent and consent of the instructor.

361. CORRECTIVE READING INSTRUCTION. 4 HOURS. Informal instruments for assessing pupil needs in reading diagnosis of test results for instructional direction; planning and teaching on a one-to-one basis; evaluation of pupil growth through post-tests. Prerequisites: Ed 261, 262 or 261, 265 or Ed 261, 282 or 261 and consent of the instructor.

370. FIELD WORK FOR URBAN EDUCATION. 8 HOURS. Time is shared between field work and the classroom to enable students to become intimately aware of city life as it affects children and education. The different work sections are: (1) workers in a Black community; (2) workers in a Latin or Indian community; (3) workers in a white ethnic community; (4) school administrators and counselors; (5) workers in human relations areas. Prerequisite: Ed 250.

371. COMMUNITY EDUCATION LABORATORIES. 5 HOURS. Three hours class time; ten to fourteen hours per week in directed field work. Analysis of the nature of the educational enterprise and of the relationships among the educational controllers, the teacher, and the community through reading, lecture, discussion, and field work. Techniques for altering professional accountability of teachers from the employing community to the students and community they purport to help. Prerequisite: Consent of the instructor.

372. SPECIAL EDUCATION PRACTICUM. 8 TO 16 HOURS. Practice teaching in the field of special education to meet certification requirements; focus on teaching the emotionally disturbed, mentally retarded, or learning disabled. A weekly seminar is included. Prerequisite: Completion of the sequence in an area of special education.

383. TEACHING ENGLISH AS A SECOND LANGUAGE. 4 HOURS. Same as English 383 and Linguistics 383. The methodology of teaching English to residents of the United States who do not speak the language, especially Spanish-Americans. Prerequisite: Engl 300 or 205 or Ling 305.

387. CAREER AND EDUCATIONAL COUNSELING IN THE COMMUNITY COLLEGE. 4 HOURS. Same as Psychology 387. Introduction to sources of information on careers and educational programs; basic techniques of student personnel contact appropriate to community college students; principles of career choice and guidance for students anticipating direct job entry or transfer to other institutions. Prerequisites: Psch 240 or Ed 250; Ed 321 or Psch 283 or 286 or the equivalents; and consent of the instructor.

390. CRITIQUE OF EDUCATIONAL LITERATURE, RESEARCH DESIGN, AND METHODOLOGY. 4 HOURS. Introduction to educational research literature; analysis of research findings in urban education; research methods and design in education; current issues in research methodology. Each student formulates a researchable problem and designs a systematic study in the chosen area of concentration. Prerequisite: An evaluation course.

College of Engineering

Herbert J. Stein PhD, Acting Dean
William DeFotis, MS, Assistant Dean
Henry A. Setton, MIE, Assistant Dean
Vivian G. Cardwell, MBA, Assistant to the Dean

The College of Engineering prepares young men and women for one or more of the many career opportunities in the engineering profession, such as those in design, production, research, development, management, and construction. An engineering education also prepares a student for work in medicine, law, public administration, and other areas.

Instruction in the college is complemented by intensive research activity by most of the faculty. Research is directed toward supporting the educational programs of the college, solving contemporary technological problems, and extending the frontiers of scientific knowledge. This continuing research activity helps to insure the integrity and progressive evolution of instructional programs at all levels. In conjunction with their teaching and research, many of the faculty also engage in public service activities in the community and in government on the local, state, and federal levels.

Departments of the College of Engineering

The administrative structure of the college is organized according to the basic functional engineering areas of energy, information, materials, and systems. The faculty are grouped in departments corresponding to these areas and in a program in bioengineering. Within this framework many instructional and research activities are cross-departmental, and the faculty in each department may cover several disciplines. This functional arrangement broadens the educational scope of the college and encourages interdisciplinary and innovative programs. The faculty are presently engaged in teaching and research activities pertinent to almost all fields of the engineering profession.

Admission to the College of Engineering

For details of entrance requirements and dates for filing an application for admission to the University, see *Admission to the University.*

Transfer Students

The College of Engineering admits qualified transfer students from other institutions. The prospective transfer student whose courses most nearly parallel the offerings at Chicago Circle in content and credit hours effects the transfer most easily. To the extent possible, a transfer student from a two-year community college should concentrate on the following course work before transferring into the College of Engineering.

1. English composition
2. Chemistry, equivalent to Chemistry 112 and 113 at Chicago Circle
3. Physics for engineers, emphasizing mechanics and electricity and magnetism (with calculus as a prerequisite)
4. Mathematics through differential equations

Mathematics and Chemistry Placement Tests

A new student who enters the College of Engineering must take the mathematics placement test unless college-level work in algebra and trigonometry with grades of D or above has been completed. Transfer students who present such college-level credit are required to take the mathematics placement test at the discretion of the dean of the College of Engineering.

Each student who presents high school credit in chemistry must take the chemistry placement test. A student who has taken one year of high school chemistry and is adequately prepared, as shown by the placement examination, takes Chemistry 112. Students who have not had high school chemistry take Chemistry 111. Credit toward graduation is not given in the College of Engineering for courses numbered *lower* than Chemistry 112 and Mathematics 130. Mathematics 170, 171, 172 also do not carry credit toward graduation.

Graduation Requirements

The Bachelor of Science in Engineering or the Bachelor of Science in Engineering Science is awarded upon the satisfactory completion of 192 quarter hours of credit. These hours (discussed in detail elsewhere in this section) include:

Core Curriculum		100 hours
Area of Concentration	(approximately)	48 hours
Humanities and Social Sciences Electives		24 hours
Free Electives	(approximately)	20 hours
Total		192 hours

To receive a degree, a student is required to achieve a 3.00 grade point average in the total of all course work in physics, chemistry, mathematics, engineering science, engineering, and courses in the area of concentration. In addition, all of the general University requirements for graduation must be met. See *General University Requirements.*

College Honors

At graduation, students are awarded College Honors for academic distinction. Such honors are designated on the diploma as Honors, High Honors, or Highest Honors.

Honors are awarded to a student who earns at least a 4.00 cumulative grade point average; High Honors are awarded to a student who earns at least a 4.30 grade point average; Highest Honors are awarded to a student who earns at least a 4.70 grade point average. All transfer work accepted for the degree is included in the determination of grade point averages. The grades for military science courses are excluded unless a student completes the 4-year military science program, in which case 5 hours of advanced credit are included in the determination of averages for College Honors. Additionally, up to 3 hours of physical education courses are included in the GPA.

Cooperative Engineering Education Program

The College of Engineering offers a cooperative engineering education program that is a coordinated alternating work-and-study program that provides an opportunity for the undergraduate student not only to acquire academic knowledge but also to obtain work experience in the chosen area of study. Interested students are invited to interview participating companies during the sophomore year. The first work session usually starts during the summer following the sophomore year. Further information on the program is available from the college office.

Undergraduate Study in Engineering Management

Jointly with the College of Business Administration, the College of Engineering offers a program in engineering management that allows the student latitude to study in both the business administration and engineering disciplines. The program prepares students to begin careers that might lead them eventually to administrative, staff, or management positions in small technological engineering or manufacturing operations or positions as production supervisors, administrative staff, or managers of departments in larger technological organizations. The program also prepares students for careers such as engineering marketing representatives, technical representatives, sales engineers, or engineering management consultants, as well as for careers in larger nontechnological operations such as banks, which may require a combination of engineering and management experiences. For additional details concerning this new program, applicants should consult the dean's office of either the College of Business Administration or the College of Engineering.

Undergraduate Study in Engineering and Engineering Sciences

The function of the engineer, both in industry and in government, is becoming increasingly broad; problems must be solved and advice must be given that cover diffuse and often seemingly unrelated areas of specialization. Furthermore, within the context of modern demands, the traditional engineering classifications have lost most of their relevance.

In recognition of this trend and in an effort to anticipate future developments, the College of Engineering offers a general undergraduate program that leads to either the Bachelor of Science in Engineering or the Bachelor of Science in Engineering Science. Engineering degree studies are oriented toward professional engineering practices; studies that lead to the baccalaureate in engineering science emphasize a more theoretical understanding of engineering and technology. In designating only these two all-encompassing degrees, the College of Engineering also recognizes one of its principal educational philosophies, namely, to allow the student the maximum possible freedom in organizing an educational program to suit specific needs and interests.

Some course programs are considered indispensable and are therefore mandatory for all students. They include, first, approximately a half year of work in the general field of the humanities and social sciences. Because the engineer and the engineering scientist are no longer narrow specialists, they cannot afford to ignore the effect of their work on the general welfare of society. The humanities-social sciences phase of their education helps them become conscious contributors to the general welfare.

All engineering and engineering science areas require familiarity with certain basic fundamentals that the common core curriculum provides for candidates for either degree. This mandatory common core curriculum, comprising slightly more than two years of work, includes instruction in mathematics and the physical sciences and an introduction to basic engineering sciences, such as mechanics, materials, thermodynamics, electronics and circuits, and systems analysis.

A package of approximately one year of work in an area of concentration is included in the requirements for either degree. This package usually represents the technical phase of the student's interest and constitutes a cohesive program of advanced work that best suits individual needs and aspirations. This portion of the curriculum also includes two senior-level courses in design that provide an integrative, creative experience at an advanced level for students in all areas of concentration except engineering physics. These design courses are not intended further to elucidate or apply advanced theories per se but rather to simulate actual engineering design experience.

Requirements for either degree are completed with approximately a half year of free electives that are often predominantly technical; however, they may also be nontechnical, particularly if the student decides to pursue a career that will be broadly based and society oriented.

Common Core Curriculum

Required of all students, the 108-quarter hour common core curriculum consists primarily of courses of study common to all branches and specializations—courses in mathematics, physics, chemistry, and the engineering sciences.

The first two years of academic work for the typical undergraduate student contain the following required common core curriculum courses:

First Year

First Quarter	*Hours*
Mathematics 130—Calculus I	5
Systems Engineering 155—Principles of Systems Engineering I	4
or	
Systems Engineering 150—Graphical Methods	2
Chemistry 112—Chemical Bonding and Structure	5
English Composition 101	4
Second Quarter	
Mathematics 131—Calculus II	5
Chemistry 113—Equilibria: Chemistry of Solutions	5
English Composition 102	4
Physics 131—Classical Physics I: Mechanics	4
Third Quarter	
Mathematics 132—Calculus III	5
Physics 132—Classical Physics II: Electrodynamics	3
Systems Engineering 150—Graphical Methods	2
or	
Systems Engineering 155—Principles of Systems Engineering I	5
Mathematics 195—Introduction to Automatic Digital Programming	3

Second Year

First Quarter	*Hours*
Mathematics 133—Calculus IV	5
Materials Engineering 200—Statics and Dynamics	4
Materials Engineering 230—Properties of Materials	4
Elective	4
Second Quarter	
Mathematics 220—Elementary Differential Equations I	3
Materials Engineering 201—Introduction to Solid Mechanics	3
Information Engineering 210—Introduction to Circuit Theory	4
Information Engineering 211—Introduction to Circuit Theory Laboratory	1
Energy Engineering 201—Thermodynamics	5
Third Quarter	
Information Engineering 240—Introduction to Electronic Systems	4
Materials Engineering 202—Materials and Mechanics Laboratory	2
Energy Engineering 211—Fluid Mechanics	4
Systems Engineering 225—Principles of Systems Engineering II	3
Elective	4

Additional Common Core Curriculum Courses

Physics 231—Modern Physics I	4
Physics 232—Modern Physics II	5

Common Core Curriculum Regulations

1. All students are expected to complete all common core curriculum course work as soon as possible.

2. All degree candidates must complete all common core curriculum courses before they are allowed to enroll in Senior Design I with the exception of students in the engineering physics area of concentration. Students in the engineering physics area may substitute technical courses in the College of Engineering if they do not desire to complete the design sequence.

Humanities and Social Sciences

To satisfy the degree requirements in the College of Engineering, a student must complete 24 quarter hours in courses in the humanities and social sciences. The student must complete a sequence of at least 8 quarter hours of course work in a discipline in the humanities and another 8 hours in a discipline in the social sciences. To complete the remaining 8 hours of the 24-quarter-hour college requirement, the student must take additional courses in either the humanities or social sciences.

Listed below are courses in disciplines recommended by the college. In addition, the student has the option, in consultation with the adviser, to develop an individualized program of sequences and courses in the humanities and social sciences including courses not on this list and in other disciplines. In general, any course with a number above the numbers on the list may be taken for credit, provided the student satisfies the prerequisites for the course and it is in the humanities or the social sciences.

Courses treating subjects such as accounting, industrial management, finance, personnel administration, introductory language, and military science cannot be used to satisfy the requirements in the humanities and social sciences. However, such courses may be taken as free electives. Students should note that English Composition 101 and 102 (required for graduation) are not accepted for humanities credit.

Humanities

Art 106
Asian Studies 171; 201-203, 213, 215-217
Black Studies 100, 101, 121, 141, 161, 163, 170-173
Classics: All courses except 201, 210
English: All courses except 205, 280, 299
Foreign languages[1]
History: All courses except 151, 152; 250-260, 287, 288, 296, 297
History of Architecture and Art 115, 116, 117, 142, 143, 144
Humanities: All courses

1. The first two years of foreign language study (usually 101-106) are not acceptable as humanities credit. Students should consult the college office to determine which courses above 106 are accepted for humanities credit.

Information Engineering 201
Latin American Studies 161, 170, 171; 223, 224, 227, 228, 232
Music 100, 130, 131; 209
Native American Studies 106, 165
Philosophy: All courses except 233; 343, 344
Speech and Theater 121-123, 141; 241
Women's Studies 146, 152

Social Sciences

Anthropology: All courses except 133, 134; 235, 236; 330, 331
Asian Studies 220, 221, 232-234, 240, 241
Black Studies 102, 110, 140, 142, 150, 165; 200, 257-259, 286, 287
Criminal Justice 101-103
Economics: All courses
Finance 360
Geography 100, 110-161; 208, 210-269
History 100, 151, 152; 250-260, 287, 288, 296, 297
Latin American Studies 103, 140, 165; 215, 216, 218, 233-235
Linguistics 150, 160, 170
Native American Studies 150, 152, 160; 221, 250, 252, 253, 261
Political Science: All 100-level courses except 100; all 200-level courses except 200, 201, 299
Psychology: All courses except 243, 299
Sociology: All courses except 201-203, 287-289, 299; 389
Speech and Theater 111-113, 131, 171, 191, 192; 211-213
Women's Studies 151, 153

Free Electives

Each student must complete a block of approximately 20 quarter hours of free elective courses, depending on the area of concentration, while maintaining a reasonable balance between technical and nontechnical work. Free electives are selected in consultation with an adviser. Students in the Military Officers Education Program are allowed 5 quarter hours of free elective credit if they complete the entire four-year program.

A maximum of 3 hours of free elective credit in physical education is allowed.

As noted, introductory language courses (101, 102, 103, 104, 105, 106) do not satisfy the 8 quarter hours of humanities requirements. However, if the adviser consents, they may be taken for free elective credit under the following provisions.

If the student continues a language begun in high school, credit is determined on the basis of both placement test results and the amount of high school work completed:

1. Students who present two years of high school credit receive credit for a 101 course provided they place in a 101 course.
2. Students who present three years of high school credit receive credit for the course in which they place provided it is not below the 102 level.
3. Students who present four years of high school credit receive credit for the course in which they place provided it is not below the 104 level.

Admission to Area of Concentration Studies

A student may declare an area of concentration after 60 quarter hours of course work and must declare an area after 90 quarter hours of course work. In order to begin studies in an area of concentration, the student must petition the appropriate curriculum committee. In general, to be admitted to area of concentration studies the student must have achieved a 3.00 (A=5.00) grade point average in the total of all physics, chemistry, mathematics, engineering science, and engineering course work completed up to that time. However, the final decision for admission rests with the curriculum committee. If the 3.00 grade point average requirement is not met, the committee may relax the requirement, may recommend additional course work, or may recommend that courses be repeated.

Each student must complete approximately 40 quarter hours of work in an area of concentration. In some areas of concentration the required number of hours is more or less than 40. In these cases, the required number of free elective hours is reduced or increased accordingly.

Shortly after enrolling in the college, a student is assigned a faculty adviser. Before the common core curriculum is completed, the student is required, in consultation with the adviser, to choose a cohesive package of appropriate courses.

Bachelor of Science in Engineering

Bioengineering
Chemical Engineering
Communication Engineering
Computer and Information Systems
Electromagnetic and Electronic Engineering
Environmental Engineering
Fluids Engineering
Industrial Engineering
Manufacturing Engineering
Mechanical Analysis and Design
Metallurgy
Structural Engineering and Materials
Systems Analysis and Design
Thermomechanics and Energy Conversion
Urban and Transportation Systems

Bachelor of Science in Engineering Science

Applied Mechanics
Engineering Physics

Individualized Area

An additional area of concentration is the individualized area, which leads to the Bachelor of Science in either Engineering or Engineering Science. The student who finds none of the foregoing areas to be appropriate for career goals may select the individualized area, and, in consultation with a faculty adviser, formulate a suitable program of study. For example, by judicious selection of courses, a student can pursue a program of study perti-

nent to such fields as plant or production engineering, sales engineering, or nuclear engineering. In each case the program formulated must meet the requirements for an area of concentration and must be approved by the college faculty and the dean.

Bioengineering Program[2]

Professors: Irving F. Miller, PhD, Head of the Program; Gyan C. Agarwal, PhD; Robert Arzbaecher, PhD; Earl E. Gose, PhD; Bruce H. McCormick, PhD; William D. O'Neill, PhD; William Rostoker, PhD; Albert B. Schultz, PhD; Bert L. Zuber, PhD.

Associate Professors: Ted B. Belytschko, PhD; Joseph C.F. Chow, PhD.

Assistant Professors: John L. Semmlow, PhD.

Bioengineering represents the interface between the engineering and life sciences. Training in this area prepares students either for graduate school or medical school or for positions in the aerospace, pharmaceutical, medical electronics, and automotive industries. In order to achieve these goals, the Bioengineering Program draws together faculty from every department within the College of Engineering and from the Medical Center.

Bioengineering—*Bachelor of Science in Engineering*

Area Advisers: Earl E. Gose, Irving F. Miller, John L. Semmlow, Bert L. Zuber.

In bioengineering education, which provides a student with a basic engineering and biological background, students take advanced engineering and biological sciences courses in the area of concentration package and as free electives. Bioengineering courses and research projects include the application of the theories of information, communication, and control to living systems; cybernetics and artificial intelligence; bioinstrumentation and artificial organs; some aspects of biophysics; and digital computer applications in biology and medicine.

Because of the nature of the bioengineering field, students entering the bioengineering area of concentration are strongly advised to continue their education beyond the baccalaureate to at least the Master of Science. With a proper choice of free electives, chosen in consultation with an adviser, a student can complete both the BS and the MS within five years of entering the University.

The courses within the area of concentration follow. For a detailed breakdown of each subarea by quarters, the student should consult an adviser.

2. Faculty for the program includes members from all departments of the College of Engineering.

Required Courses		*Hours*
Two of	BioS 100, 101, 102—General Biology I, II, III	10
	BioS 261—Cell Physiology	3
	BioS 363, 364—Animal Physiology I, II	10
	BioE 200—Introduction to Bioengineering	4
		27

Either A, B, or C:

A. *Bioinstrumentation and Systems*

Either	InfE 311—Linear Systems Analysis	
or	SysE 315—Dynamic Systems Analysis	4
	BioE 354—Bioinstrumentation I: Transducers	4
3 from	BioE 307—Pattern Recognition I	4
	BioE 341—Man-Machine Systems	4
	BioE 352—Biocontrol	3
	BioE 353—Biocontrol Laboratory	3
	InfE 379—Real-Time Computing	4
	BioS 359—Neuroanatomy	5
	BioE 396—Senior Design I	4
	BioE 397—Senior Design II	4
		26-29

B. *Biomedical Materials and Devices*

Chem 114—Structure and Reactivity	5
Chem 232—Organic Chemistry I	4
BioE 350—Prostheses and Artificial Organs	4
BioE 355—Engineering Biophysics	4
BioE 356—Biomaterials	4
BioE 396—Senior Design I	4
BioE 397—Senior Design II	4
	29

C. *Bioinformation Systems*

	BioE 307—Pattern Recognition I	4
4 from	InfE 270—Information Structures	4
	InfE 302—File and Communication Systems	4
	InfE 370—Computer Systems	4
	InfE 374—Software Design	4
	InfE 375—Artificial Intelligence I	4
	InfE 379—Real-Time Computing	4
	BioE 396—Senior Design I	4
	BioE 397—Senior Design II	4
		28

Substitution of courses within these tracks may be permitted with the approval of the adviser and the Bioengineering Curriculum Committee.

Courses (BioE)

200. INTRODUCTION TO BIOENGINEERING. 4 HOURS. Fundamental aspects of some engineering problems presented by man, his society, his environment, and his interaction with machines. How engineering analysis may be applied to help solve some complex biological problems. Prerequisites: Phys 132, Math 133 or the equivalents.

259. NEUROBIOLOGY. 4 HOURS. Same as Biological Sciences 259 and Information Engineering 259. Introduction to basic anatomical and physiological concepts of the human nervous system. Prerequisites: One year of biological sciences and senior standing or consent of the instructor.

292. UNDERGRADUATE RESEARCH. 2 TO 4 HOURS. May be repeated for a total of 6 hours. Research under close supervision of a faculty member. Prerequisites: Senior standing and consent of the instructor.

307. PATTERN RECOGNITION I. 4 HOURS. Same as Information Engineering 307 and Systems Engineering 307. The design of automated classification systems. Decision theory. Parametric and nonparametric procedures for the classification of patterned data sets. Clustering and unsupervised learning. Prerequisite: SysE 342 or Math 370.

341. MAN-MACHINE SYSTEMS. 4 HOURS. Same as Systems Engineering 341. Specific system areas in which the role of man in the system operation requires a systematic analysis of the human component in the system. Critical concepts, variables, and techniques involved in optimum design of human operated systems. Laboratory experiments on man-machine interactions. Prerequisite: SysE 315.

350. PROSTHESES AND ARTIFICIAL ORGANS. 4 HOURS. The special problems encountered in the design of organ replacements as engineering devices. Suborgan replacements, circulatory-assist devices, artificial kidneys, and other organ systems. Prerequisites: BioE 200, BioS 363, 364, EnrE 211 or the equivalent, MatE 230.

352. BIOCONTROL. 3 HOURS. Same as Information Engineering 352. Applicability of control systems theory to physiological systems, including the pupil system and eye and hand movement systems, utilizing such techniques as Fourier analysis, Nyquist stability criteria, and cross-correlation. Prerequisites: InfE 311 and 383 or 384.

353. BIOCONTROL LABORATORY. 3 HOURS. Same as Information Engineering 353. Experimental counterpart of Bioengineering 352. Motor coordination, crayfish photoreceptor, human pupil, eye movement. Prerequisite: Credit or registration in BioE 352.

354. BIOINSTRUMENTATION: TRANSDUCERS. 4 HOURS. Same as Information Engineering 354. Energy conversion; detailed discussion of transducers used in biological research. Prerequisites: BioE 200, InfE 240, 311.

355. ENGINEERING BIOPHYSICS. 4 HOURS. Introduction to biophysical mechanisms at the molecular, cellular, and organ levels. Thermodynamic aspects of biological processes, solutions of macromolecules; chemical equilibrium and kinetics; transport processes; diffusion; viscosity; quantitative description and modeling of biophysical mechanisms. Prerequisites: Math 220, EnrE 201, or Chem 114, and any two of BioS 100, 101, 102.

356. MATERIALS IN BIOENGINEERING. 4 HOURS. Same as Materials Engineering 356. Analysis of problems associated with prostheses and other implanted devices, both medical and dental. Prerequisites: Math 230, BioS 363 or 364.

359. NEUROANATOMY. 5 HOURS. Same as Biological Sciences 359 and Information Engineering 359. Introduction to the neurological organization of the mammalian central nervous system. Prerequisites: BioS 280 and consent of the instructor.

391. SEMINAR. 1 TO 4 HOURS. May be repeated for additional credit. Topics to be arranged. Prerequisite: Consent of the instructor.

393. SPECIAL PROBLEMS. 2 TO 4 HOURS. May be repeated for additional credit. Special problems or readings by arrangement with the faculty. Prerequisites: Senior standing and consent of the instructor.

396. SENIOR DESIGN I. 4 HOURS. Same as Energy Engineering 396, Information Engineering 396, Materials Engineering 396, and Systems Engineering 396. Introduction to engineering economics, legal and social constraints on design, safety and reliability theory, and the use of simulation and optimization techniques in the engineering design process. Prerequisites: Senior standing and completion of all core requirements in the College of Engineering.

397. SENIOR DESIGN II. 4 HOURS. Same as Energy Engineering 397, Information Engineering 397, Materials Engineering 397, and Systems Engineering 397. Application of principles of engineering and engineering design methodology to the solution of a large-scale design problem. May be taken in any department, regardless of area of concentration. Prerequisite: BioE 396.

Energy Engineering

Professors: Paul M. Chung, PhD, Head of the Department; Huei-Huang Chiu, PhD; Arnold C. Cobb, MA (Emeritus); Henry L. Garabedian, PhD (Emeritus); James P. Hartnett, PhD; John H. Kiefer, PhD; Satish C. Saxena, PhD; Harold A. Simon, PhD.

Associate Professors: Joseph C.F. Chow, PhD; Allen C. Cogley, PhD; David S. Hacker, PhD; G. Ali Mansoori, PhD; Wolodymyr J. Minkowycz, PhD; Edward S. Pierson, ScD (Adjunct); Stephen Szepe, PhD.

Assistant Professors: Michael H. Barnes, PhD; Larry M. Joseph, PhD; James J. Komar, PhD; Larry W. Rodgers, PhD.

Lecturers: Lyndon R. Babcock, PhD.

Areas of Concentration

Chemical Engineering
Environmental Engineering
Fluids Engineering
Thermomechanics and Energy Conversion

The Department of Energy Engineering introduces all engineering students to the fundamentals of thermodynamics and fluid mechanics. Special-

ized courses at the undergraduate and graduate levels expand upon these fundamentals and provide a foundation of engineering knowledge further enhanced within the areas of concentration listed above. These areas of undergraduate concentration are mainly associated with the Department of Energy Engineering and are designed to prepare the students for engineering professions demanded by industry and also are intended to prepare qualified students for advanced studies at the graduate level.

Chemical Engineering—*Bachelor of Science in Engineering*

Area Advisers: David S. Hacker, Larry M. Joseph, John H. Kiefer, G. Ali Mansoori, Satish C. Saxena, Stephen Szepe.

Chemical engineering deals with the technology of using chemical and physical processes to convert naturally occurring raw materials into final consumer products. By combining the art of industrial technology with modern concepts of science and engineering, it is possible to bring about the realization of processes developed in the laboratory for the production of petroleum products, pharmaceuticals, foods, and chemicals.

The chemical engineering program comprises a full complement of chemistry as well as the basic principles of chemical engineering. These include thermodynamics, separation processes, transport phenomena, reactor design, and process control. Electives in chemical engineering may be chosen from the offerings of several departments.

Second Year[3]

Third Quarter	*Hours*
Chem 121—Analytical Chemistry	5
EnrE 232—Material and Energy Balances	3

Third Year

First Quarter	*Hours*
Chem 340—Physical Chemistry I	4
Chem 341—Physical Chemistry Laboratory I	2
EnrE 234—Heat and Momentum Operations	4
Phys 231—Modern Physics I	4
	14

Second Quarter	
Chem 342—Physical Chemistry II	4
EnrE 285—Equilibrium State Separations	3
EnrE 235—Chemical Engineering Laboratory I	2
Phys 232—Modern Physics II	5
	14

Third Quarter	
EnrE 287—Mass Transfer Operations	3
EnrE 237—Chemical Engineering Laboratory II	2
InfE 240—Introduction to Electronics	4
Humanities or social sciences electives	8
	17

3. The student should declare a major area of concentration in the second quarter of the sophomore year.

Fourth Year

First Quarter	*Hours*
Chem 232—Organic Chemistry I	4
EnrE 331—Chemical Engineering Thermodynamics	4
Humanities or social sciences elective	4
Free elective	4
	16

Second Quarter	
Chem 233—Organic Chemistry II	4
Chem 234—Organic Chemistry Laboratory I	1
EnrE 386—Chemical Reaction Engineering	4
EnrE 396—Engineering Design	4
Free elective	4
	17

Third Quarter	
Chem 236—Organic Chemistry Laboratory II	1
EnrE 397—Chemical Engineering Design	4
EnrE 345—Introduction to Chemical Process and Energy Conversion Control	3
Humanities or social sciences electives	8
	16

Environmental Engineering—*Bachelor of Science in Engineering*

Area Advisers: Huei-Huang Chiu, Allen C. Cogley, David S. Hacker, Larry W. Rodgers, Stephen Szepe.

Environmental engineering is concerned with the basic engineering principles necessary to measure, analyze, and control man's environment. The student is provided with the background for solving environmental and related problems through the application of the fundamentals of physics, chemistry, thermodynamics, and fluid mechanics. Course subject matter varies from the applied aspects of meteorology and oceanography to air and water pollution control technology. Environmental engineering is an interdisciplinary area that encourages electives in biology, geology, chemistry, economics, and public health.

Potential employment opportunities include governmental agencies and industries concerned with the monitoring of atmospheric pollutants, industrial pollution control technology, oceanographic engineering, urban meteorology, water purification and sanitation, earth-resources satellites, solid waste disposal, and water resource planning.

All students are required to take a common course package followed by one of two optional paths. The air and water resources option is concerned with the geophysical environment and is designed for those students interested in applied meteorology, hydrology, and oceanography. The pollution control technology option is designed for students interested in industrial pollution control, sanitary engineering, and statistical analysis for resource management.

Courses Required for Both Options

	Hours
Chem 121—Analytical Chemistry	5
EnrE 202—Intermediate Thermodynamics	4
or	
EnrE 331—Chemical Engineering Thermodynamics	4
EnrE 232—Material and Energy Balances	3
EnrE 261—Introduction to Environmental Pollution Control	4
One of the following:	
EnrE 371—Air Resources Engineering	4
EnrE 372—Water Resources and Pollution Control	4
MatE 381—Noise and Vibration Control	4

Typical Course Schedule for Air and Water Resources Option

Second Year

Third Quarter	*Hours*
EnrE 232—Material and Energy Balances	3
Chem 121—Analytical Chemistry	5

Third Year

First Quarter	*Hours*
EnrE 202—Intermediate Thermodynamics	4
or	
EnrE 331—Chemical Engineering Thermodynamics	4
Phys 231—Modern Physics I	4
EnrE 214—Viscous Fluid Mechanics	4
Humanities or social sciences elective	4
	16

Second Quarter	
Phys 232—Modern Physics II	5
EnrE 217—Introduction to Meteorology	4
EnrE 261—Introduction to Environmental Pollution Control	4
Humanities or social sciences elective	4
	17

Third Quarter	
EnrE 215—Engineering Hydrology	4
or	
Geols 350—Hydrogeology	4
InfE 240—Introduction to Electronics	4
Humanities or social sciences elective	4
Free elective	4
	16

Fourth Year

First Quarter	*Hours*
EnrE 311—Ocean and Estuary Hydrodynamics	4
Humanities or social sciences elective	4
Free electives	8
	16

Second Quarter

EnrE 396—Senior Design I	4
EnrE 361—Atmospheric Motions	4
EnrE elective—EnrE 371 or MatE 381	4
Humanities or social sciences elective	4
	16

Third Quarter

EnrE 397—Senior Design II	4
EnrE 372—Water Resources and Pollution Control*	4
Humanities or social sciences elective	4
Free elective*	4 or 8
	16

*If EnrE 371 or MatE 381 already elected

Typical Course Schedule for Pollution Control Technology Option

Second Year

Third Quarter

	Hours
EnrE 232—Material and Energy Balances	3
Chem 121—Analytical Chemistry	5

Third Year

First Quarter

	Hours
EnrE 331—Chemical Engineering Thermodynamics	4
or	
EnrE 202—Intermediate Thermodynamics	4
EnrE 234—Heat and Momentum Operations	4
Phys 231—Modern Physics I	4
Humanities or social sciences elective	4
	16

Second Quarter

EnrE 235—Chemical Engineering Laboratory I	2
EnrE 261—Introduction to Environmental Pollution Control	4
Phys 232—Modern Physics II	5
Humanities or social sciences elective	4
	15

Third Quarter

InfE 240—Introduction to Electronic Systems	4
Free electives	8
Humanities or social science elective	4
	16

Fourth Year

First Quarter

	Hours
SysE 342—Experimental Design	4
Humanities or social sciences electives	8
Free elective	4
	16

Second Quarter

EnrE 338—Particulate Solids Processing	4
SysE 345—Modeling in Socio-Technological Systems	4
EnrE 396—Senior Design I	4
EnrE elective—EnrE 371 or MatE 381	4
	16

Third Quarter

EnrE 397—Senior Design II	4
EnrE 372—Water Resources and Pollution Control*	4
Humanities or social sciences elective	4
Free elective	4
	16

*Free elective if EnrE 371 or MatE 381 already elected

Fluids Engineering—*Bachelor of Science in Engineering*

Area Advisers: Joseph C.F. Chow, Paul M. Chung, Allen C. Cogley, James J. Komar.

Fluids engineering is based on those aspects of theoretical and applied mechanics that incorporate continuum mechanics of fluids, energy transport processes, and thermodynamics. The program of study includes theoretical analysis, laboratory experience, and synthesis through the design process.

These basic disciplines may be applied in such diverse fields as oceanography, fluid machinery, and aerospace. Career opportunities for such specialists are in aircraft, ground transportation, ship design, fluid equipment, power equipment, and aerospace industries. More recent interest has been shown in the related fields of biofluids and meteorology.

Third Year

First Quarter	*Hours*
Phys 231—Modern Physics I	4
MatE 204—Mechanics of Solids I	4
EnrE 214—Viscous Fluid Mechanics	4
Humanities or social sciences elective	4
	16

Second Quarter

Phys 232—Modern Physics II	5
MatE 206—Mechanics of Solids II	4
EnrE 212—Potential Flow	4
EnrE 221—Heat Transfer	4
	17

Third Quarter

MatE 208—Mechanical Vibrations	4
EnrE 213—Compressible Flow	4
EnrE 241—Experimental Methods in Solid and Fluid Mechanics	4
Humanities or social sciences elective	4
	16

Fourth Year

First Quarter	*Hours*
EnrE 361—Atmospheric Motions**	4
Humanities or social sciences electives	8
Free elective*	4 or 8
	16

Second Quarter	
EnrE 396—Senior Design I	4
EnrE 311—Ocean and Estuary Hydrodynamics**	4
EnrE 313—Flight Dynamics: Stability and Control***	4
Humanities or social sciences elective	4
Free elective	0 or 4
	16

Third Quarter	
EnrE 397—Senior Design II	4
EnrE 314—Propulsion***	4
Free electives	8 or 12
	16

*A total of 20 hours of free electives is required.
**The student must take either EnrE 361 in the first quarter or EnrE 311 in the second quarter.
***The student must take either EnrE 313 in the second quarter or EnrE 314 in the third quarter.

Thermomechanics and Energy Conversion—*Bachelor of Science in Engineering*

Area Advisers: Michael H. Barnes, James P. Hartnett, Wolodymyr J. Minkowycz, Larry W. Rodgers, Harold A. Simon.

The common core taken by all engineering students is extended in this area of concentration to include further work on heat transfer and the thermodynamics of power systems. Two optional paths are provided, one with a mechanical emphasis and the other with an electrical emphasis.

A graduate from the mechanical option is prepared for a career in those industries or research establishments concerned with power devices—such as turbines, internal combustion engines, reactors, or solar energy equipment—and may also pursue areas involving heat transfer and combustion or heating and refrigeration.

The electrical option includes courses in electromagnetic fields, circuits, and thermodynamics that provide a background for courses in discrete devices (motors), continous devices (magnetohydrodynamic generators), and novel or direct-energy conversion devices (thermionic converters, fuel cells). An understanding of physical processes is emphasized. Engineers with this background are required in the electric power industry and in the development of new power systems, high-speed transportation, pollution control, urban engineering, and improved automobile-propulsion systems. This option, together with the core, comprises a large portion of what is traditionally called mechanical engineering. The addition of certain elective courses from the Department of Materials Engineering makes the resemblance even closer.

Typical Course Schedule for Electrical Option

Third Year

First Quarter	*Hours*
Phys 231—Modern Physics I	4
EnrE 202—Intermediate Thermodynamics	4
EnrE 214—Viscous Fluid Mechanics	4
Humanities or social sciences elective	4
	16

Second Quarter	
Phys 232—Modern Physics II	5
EnrE 203—Thermodynamics of Power Systems	4
EnrE 221—Heat Transfer	4
Humanities or social sciences elective	4
	17

Third Quarter	
Technical elective*	4
Free electives	8
Humanities or social sciences elective	4
	16

Fourth Year

First Quarter	*Hours*
InfE 212—Signal Processing	4
EnrE 351—Electromechanical Energy Conversion I	4
Technical elective*	4
Humanities or social sciences elective	4
	16

Second Quarter	
InfE 321—Electromagnetic Fields	4
EnrE 396—Senior Design I	4
Humanities or social sciences elective	4
Free elective	4
	16

Third Quarter	
EnrE 353—Direct Energy Conversion	4
EnrE 397—Senior Design II	4
Free electives	8
	16

Typical Course Schedule for Mechanical Option

Third Year

First Quarter	*Hours*
Phys 231—Modern Physics I	4
EnrE 202—Intermediate Thermodynamics	4
EnrE 214—Viscous Fluid Mechanics	4
Humanities or social sciences elective	4
	16

Second Quarter

Phys 232—Modern Physics II	5
EnrE 203—Thermodynamics of Power Systems	4
EnrE 221—Heat Transfer	4
Humanities or social sciences elective	4
	17

Third Quarter

EnrE 213—Compressible Fluid Flow	4
EnrE 251—Introduction to Electromechanical Devices	4
Humanities or social sciences elective	4
Free elective	4
	16

Fourth Year

First Quarter

	Hours
EnrE 241—Experimental Methods in Solid and Fluid Mechanics	4
Technical elective*	4
Humanities or social sciences elective	4
Free elective	4
	16

Second Quarter

EnrE 396—Senior Design I	4
Technical elective*	4
Humanities or social sciences elective	4
Free elective	4
	16

Third Quarter

EnrE 321—Intermediate Heat Transfer	4
EnrE 397—Senior Design II	4
Free electives	8
	16

***Technical Electives**

Eight hours are required from the following list of electives. The electrical option may not elect EnrE 251.

	Hours
EnrE 213—Compressible Flow	4
EnrE 241—Experimental Methods in Solid and Fluid Mechanics	4
EnrE 251—Introduction to Electromechanical Devices	4
EnrE 261—Introduction to Environmental Pollution Control	4
EnrE 304—Transport Phenomena	4
EnrE 305—Statistical Thermodynamics	4
EnrE 314—Propulsion	4
EnrE 321—Intermediate Heat Transfer	4
EnrE 325—Combustion Engineering	4
EnrE 351—Electromechanical Energy Conversion I	4
EnrE 352—Electromechanical Energy Conversion II	4
EnrE 353—Direct Energy Conversion	4

InfE 212—Signal Processing	4
InfE 311—Linear Systems Analysis	4
InfE 320—Fields and Waves III	4
InfE 321—Electromagnetic Fields	4
MatE 208—Mechanical Vibrations	4
Math 321—Elementary Differential Equations II	3

Courses (EnrE)

100. ENERGY: SOURCES, CONVERSION, CONSERVATION. 4 HOURS. Natural sources of energy; methods of energy conversion from natural sources to useful forms; means of energy transportation; uses of energy; energy conservation. The energy crisis. Prerequisite: Sophomore standing.

201. THERMODYNAMICS. 5 HOURS. Work and energy. Simple kinetic theory. Temperature. First law of thermodynamics and applications. Properties and state. Equations of state and phases of matter. Second law of thermodynamics. Equilibrium. Gibbs's equations. Entropy. Maxwell relations. Clapeyron equation. Applications. Discussion and laboratory. Prerequisites: Math 133, Phys 131.

202. INTERMEDIATE THERMODYNAMICS. 4 HOURS. Thermodynamics of state. Vapor and gas power cycles; refrigeration cycles. Prerequisite: EnrE 201.

203. THERMODYNAMICS OF POWER SYSTEMS. 4 HOURS. In-depth analysis of thermodynamics as applied to power systems. Irreversibility and availability, Brayton and Rankine cycles, advanced power systems, environment problems associated with power systems. Prerequisite: EnrE 202.

211. FLUID MECHANICS. 4 HOURS. Fluid properties. Dimensional analysis. Statics and kinematics. Convervation equations. Inviscid, incompressible flow; Bernoulli's equation. Integral momentum theorem. Viscous flow. Qualitative discussion of turbulent flow and the boundary layer concept. Applications to internal and external flows. Moody's diagram. Discussion and laboratory. Prerequisite: Credit or registration in EnrE 201.

212. POTENTIAL FLOW. 4 HOURS. Basic irrotational flows; their combination and transformation used in modeling flows with solid surfaces. Elementary two-dimensional airfoil theory. Prerequisite: EnrE 211.

213. COMPRESSIBLE FLOW. 4 HOURS. Compressible, isentropic, one-dimensional flow. Waves and characteristics in supersonic flows. Prerequisite: EnrE 211.

214. VISCOUS FLUID MECHANICS. 4 HOURS. Governing equations, energy dissipation, exact and approximate solutions, boundary layer theory, turbulent flows. Prerequisite: EnrE 211.

215. ENGINEERING HYDROLOGY. 4 HOURS. Basic principles, methods of analysis, and applications for engineering planning and design. Major topics include the various phases of the hydrologic cycle, data collection and interpretation, water resources systems, determination of flow capacity for hydraulic structures. Statistical analysis. Prerequisite: EnrE 211.

216. OCEANOGRAPHY. 4 HOURS. The chemical and physical marine environment. Waves, currents, and mixing processes. Marine organisms. Prerequisite: EnrE 214.

217. INTRODUCTION TO METEOROLOGY. 4 HOURS. The structure and thermodynamics of the atmosphere. Aspects of cloud formation, precipitation mechanisms, and heat transfer as related to meteorological phenomena. Wind structure and turbulence in the lower atmosphere. Study of the overall system. Prerequisites: EnrE 211, Math 220.

218. APPLIED FLUID MECHANICS. 4 HOURS. Applications in internal and external, subsonic and supersonic flows. Channel and pipe flows; flow measurement; turbomachinery; ground, sea, air, and space craft; fluidics; global fluid mechanics. Prerequisite: EnrE 211.

221. HEAT TRANSFER. 4 HOURS. Modes of heat transfer, material properties. One- and two-dimensional conduction. Extended surfaces. Analog, graphical, and numerical techniques. Forced and free convection. Heat exchangers. Radiation. Shape factors. Ideal and real surfaces. Laboratories in conduction, convection, and radiation. Prerequisites: EnrE 201, 211.

232. MATERIAL AND ENERGY BALANCES. 3 HOURS. Material and energy balances applied to chemical systems. Thermochemical calculations of heats of reaction and combustion. Vapor pressure, solubility, and partial pressure. Calculations of chemical and metallurgical process systems. Prerequisites: EnrE 201, Chem 121.

234. HEAT AND MOMENTUM OPERATIONS. 4 HOURS. Transport operations of heat and momentum applied to chemical engineering processes. Systems of fluid flow, including Newtonian and non-Newtonian fluids. Flow through porous media. Flow past immersed bodies. Principles of heat transfer to fluids with and without phase change. Filtration, centrifugation, and evaporation. Prerequisites: EnrE 211, 232.

235. CHEMICAL ENGINEERING LABORATORY I. 2 HOURS. A 4-hours-per-week laboratory; experimental studies of heat and momentum transfer operations associated with chemical process equipment. Experimental studies on filtration, fluidizations, mixing, boiling, flow through packed beds, and viscosity measurements. Prerequisites: EnrE 232 and credit or concurrent registration in EnrE 234.

237. CHEMICAL ENGINEERING LABORATORY II. 2 HOURS. A 4-hours-per-week laboratory; experimental studies of stagewise operations in chemical engineering. Experimental studies on evaporation, distillation, extraction, humidification, and drying. Prerequisite: EnrE 285.

241. EXPERIMENTAL METHODS IN SOLID AND FLUID MECHANICS. 4 HOURS. Same as Materials Engineering 241. Introduction to the theory and practice of experimental methods, measurement techniques in solids and fluids, analysis of errors. Concurrent laboratory experiments and reports. Prerequisites: EnrE 211, MatE 201.

251. INTRODUCTION TO ELECTROMECHANICAL DEVICES. 4 HOURS. Credit is not given for both Energy Engineering 251 and 351. Mechanical forces from electromagnetic fields and from conservation of energy. Practical introduction to operation and control of commutator, synchronous, and induction machines; transformers. Laboratories. Prerequisites: InfE 210, Phys 231.

261. INTRODUCTION TO ENVIRONMENTAL POLLUTION CONTROL. 4 HOURS. Scientific and technical problems. Air, water, thermal, and noise pollution; solid waste disposal; pollution by pesticides. Prerequisite: Sophomore standing or consent of the instructor.

285. EQUILIBRIUM STAGE SEPARATIONS. 3 HOURS. Thermodynamics of phase equilibria and phase diagrams. Development of the theory of stagewise separations. Applications to the cases of distillation, extraction, absorption, and leaching. Prerequisite: EnrE 232.

287. MASS TRANSFER OPERATIONS. 3 HOURS. Completes the study of transfer operations as they relate to diffusional processes and simultaneous rate processes. Transport properties for gases and liquids; governing equations under a variety of flow constraints, such as drying, humidification, and absorption. Prerequisite: EnrE 285.

289. COOPERATIVE ENGINEERING PRACTICE. 0 HOURS. Same as Information Engineering 289, Materials Engineering 289, and Systems Engineering 289. Off-campus participation in a government or industrial training program. Prerequisite: Enrollment in the cooperative engineering program.

290. COOPERATIVE ENGINEERING SEMINAR. 1 HOUR. Same as Information Engineering 290, Materials Engineering 290, and Systems Engineering 290. Lectures and seminar for students in the cooperative engineering program. Prerequisite: EnrE 289, taken during the previous term.

292. UNDERGRADUATE RESEARCH. 2 TO 4 HOURS. Research under close supervision of a faculty member. Prerequisites: Senior standing and consent of the instructor.

293. SPECIAL PROBLEMS. 2 TO 4 HOURS. Special problems or reading by special arrangement with the faculty. Prerequisites: Senior standing and consent of the instructor.

304. TRANSPORT PHENOMENA. 4 HOURS. Introduction to continuum theory of momentum, energy, and mass transfer. Transport of scalar and vector quantities. Reynolds's transport theorem. General differential equations of transport phenomena. Momentum shell balances. Energy transport. Diffusion. Coupled operations, free convection, simultaneous heat and mass transfer, and like processes. Prerequisites: EnrE 201 and 211 or consent of the instructor.

305. STATISTICAL THERMODYNAMICS. 4 HOURS. Microscopic statistical approach to thermodynamic systems. Calculation of partition function and thermodynamic properties. Polyatomic systems; chemical equilibrium; other engineering applications. Prerequisites: EnrE 201; Math 220 or the equivalent.

307. KINETIC THEORY OF GASES AND TRANSPORT PHENOMENA. 4 HOURS. Basic concepts of kinetic theory of gases. Equations of state and their molecular interpretation. Elementary classical statistics, molecular collisions. Application of the kinetic theory to viscosity, heat conduction, and diffusion. Prerequisite: Completion of the core program.

311. OCEAN AND ESTUARY HYDRODYNAMICS. 4 HOURS. Fluid mechanics of oceans, estuaries, coastlines, and lakes. Tidal, current, and wave phenomena of large, free-surface bodies of water in rotating coordinates. Laboratory work with rotating water table and wave generation and measurements. Prerequisite: EnrE 214 or consent of the instructor.

312. POROUS MEDIA. 4 HOURS. Mechanics of fluid flow in porous media. Steady and unsteady laminar flow in isotropic and anisotropic media. Multiphase and multilayered systems. Prerequisites: EnrE 212 and 215 or consent of the instructor.

313. FLIGHT DYNAMICS: STABILITY AND CONTROL. 4 HOURS. Static and dynamic stability and control of six-degree-of-freedom machines with aerodynamic and propulsive loading. Development of the complete force, moment, orientation, and control equations. Laboratory in aerodynamic force measurements and analog simulation of stability and control. Prerequisite: EnrE 212 or consent of the instructor.

314. PROPULSION. 4 HOURS. Thermodynamics and fluid mechanics of air breathing engines. Performance of rockets—chemical, nuclear, and electrical. Prerequisite: EnrE 213.

316. INTRODUCTION TO CONTINUUM MECHANICS. 4 HOURS. Same as Materials Engineering 316. Cartesian tensors, kinematics of fluids and solids, conservation equations, constitutive equations for simple materials. Examples. Prerequisites: EnrE 211 or MatE 204, Math 220.

317. INTERMEDIATE FLUID MECHANICS. 4 HOURS. Development of the conservation equations for a Newtonian fluid: continuity, Navier-Stokes, and energy equations. Some exact and approximate solutions of highly viscous, viscous, and inviscid flow problems. Prerequisite: Math 220 or the equivalent.

318. ELEMENTS OF TURBULENT FLOW AND MIXING. 4 HOURS. Turbulent transport equations; statistical nature of turbulent transports; recent developments in turbulent mixing; free shear flows; stratified flows; wall shear flows. Prerequisites: EnrE 214 and any one of EnrE 221, 234, 311, 361.

319. ACOUSTICAL FLUID MECHANICS. 4 HOURS. Physical description of acoustical sources, propagation, and receivers. Fluid turbulence, oscillations, and instabilities as sources of noise. Applied acoustics for the design of sound control devices and materials. Laboratory in the calibration and use of acoustical instrumentation. Fluid sound sources. Prerequisite: EnrE 213 or consent of the instructor.

320. HEATING, VENTILATING, AND AIR CONDITIONING. 4 HOURS. Refrigeration systems and heat-pump, ventilation systems, residential and industrial requirements, heating and cooling loads, air-washers, systems controls. Prerequisites: EnrE 201 and 211 or OM 412 (School of Public Health) or Arch 316.

321. INTERMEDIATE HEAT TRANSFER. 4 HOURS. Topics in conduction, convection, and radiation with emphasis on exact solutions; extended surfaces, two-phase flow, entrance length problems, real surface and gaseous radiation problems, and combined modes of heat transfer. Laboratory to complement the lectures. Prerequisite: EnrE 221 or consent of the instructor.

325. COMBUSTION ENGINEERING. 4 HOURS. Topics in combustion, providing both a theoretical and an applied understanding of flame processes as they relate to furnace design, air pollution, and propulsion. Heat and mass transfer by various modes, chemistry and dynamics of combustion phenomena. Current literature. Prerequisites: EnrE 201 and either 214 or 234.

331. CHEMICAL ENGINEERING THERMODYNAMICS. 4 HOURS. Review of classical engineering thermodynamics. The property relations and mathematics of properties. Thermodynamics of energy conversion and fluid flow. Multicomponent systems and multicomponent phase equilibria. Equilibrium in chemically reacting systems, heterogeneous equilibrium, Gibbs's phase rule, and electrochemical processes. Prerequisite: EnrE 201 or the equivalent.

335. PHYSICAL PROPERTIES OF FLUIDS. 4 HOURS. Prediction and correlation of the various equilibrium and nonequilibrium properties of pure fluids and their mixtures, such as critical constants, vapor pressure, latent heat of vaporization, heat capacity, heat formation, surface tension, virial coefficients, viscosity, thermal conductivity, and diffusion coefficients. Prerequisites: EnrE 201 and 211 or consent of the instructor.

338. PARTICULATE SOLIDS PROCESSING. 4 HOURS. Same as Materials Engineering 338. Mathematical characterization of distribution of particle size; the population balance. Mechanical methods of size classification and size reduction. Energy consideration in the theory of grinding. Fluid-solid and solid-solid separation processes; fluidization of mixed solids, transport of suspensions of solids. Prerequisites: EnrE 211, MatE 230.

341. EXPERIMENTAL METHODS AND TECHNIQUES. 4 HOURS. Purpose and design of experiments; statistical analysis of errors; wind tunnel, shock tube, high vacuum, and chemical reactor techniques; theory of mechanical, thermal, optical, and chemical measurements. Prerequisite: Consent of the instructor.

345. INTRODUCTION TO CHEMICAL PROCESS AND ENERGY CONVERSION CONTROL. 3 HOURS. Analysis and formulation of chemical and energy conversion operations requiring control. Design and analysis of feedback and feedforward systems used to control chemical and energy conversion equipment. Stability, tuning, and simulation of control systems using analytical techniques and digital computers. Prerequisites: Math 220 and EnrE 287 or consent of the instructor.

351. ELECTROMECHANICAL ENERGY CONVERSION I. 4 HOURS. Conservation of energy and electromagnetic forces. Principles of rotating machines and equations of motion. Applications to synchronous, induction, dc, and novel machines. Linear and nonlinear lumped-parameter systems, stability. Laboratories. Prerequisites: InfE 212 and 219 or consent of the instructor.

352. ELECTROMECHANICAL ENERGY CONVERSION II. 4 HOURS. Continues Energy Engineering 351. Completion of rotating machines and lumped-parameter systems. Interaction of electromagnetic fields with stationary and moving continuous media, Maxwell stress tensor, waves and instabilities. Applications to energy conversion with emphasis on fluids (magnetohydrodynamics). Laboratories. Prerequisites: EnrE 211, 351, InfE 221.

353. DIRECT ENERGY CONVERSION. 4 HOURS. Novel methods of converting heat directly to electrical energy. Topics are chosen from among, but not limited to, magnetohydrodynamics, thermoelectriecs, thermionics, and fuel cells. Prerequisites: EnrE 211 and 251 or 351, or consent of the instructor.

361. ATMOSPHERIC MOTIONS. 4 HOURS. The equations of motion on a rotating earth and their application to meteorology. Various aspects of inertial, geostrophic, and gradient winds. Atmospheric turbulence and flow in the earth's boundary layer. Laboratory modeling criteria and dynamic similitude. Diffusion of heat, water vapor, and atmospheric pollutants. Prerequisite: EnrE 214 or consent of the instructor.

371. AIR RESOURCE ENGINEERING. 4 HOURS. Advanced study of the air resource system: emphasis on quantitative relationships among sources, meteorology, and receptors. Topics include air sampling and analysis techniques, application of atmospheric diffusion equations to source monitoring and pre-

diction of ambient air quality, and theory and design of control equipment for particulate and gaseous pollutants. Prerequisites: EnrE 232 or the equivalent and EnrE 261 or EH 300 (School of Public Health).

372. WATER RESOURCES AND POLLUTION CONTROL. 4 HOURS. Hydraulics of water supply and distribution systems. Water quality tests for biological and chemical pollutants. Basic principles and theory of water purification and sanitary engineering, including physical, chemical, and biological treatment processes. Advanced water reclamation techniques. Prerequisites: Chem 121, EnrE 261.

375. AEROSOLS ENGINEERING. 4 HOURS. Classification, distribution, convection, diffusion, and dispersion of aerosols in laminar and turbulent flows. Coagulation, photophoresis, thermophoresis, and diffusiophoresis. Application of the theory to pollution control technology. Prerequisite: EnrE 214 or 234 or consent of the instructor.

386. CHEMICAL REACTION ENGINEERING. 4 HOURS. Kinetics of homogeneous single reactions. Ideal reactors: batch, stirred tank, and plug flow systems. Conversion and yield in multiple reactions. Design and optimization of reactors. Nonisothermal reactors. Prerequisite: Chem 342 or the equivalent.

391. SEMINAR. 1 TO 4 HOURS. May be repeated for credit. Topics of mutual interest to a faculty member and a group of students are announced by department bulletin or the Timetable. Prerequisite: Consent of the instructor.

396. SENIOR DESIGN I. 4 HOURS. Same as Bioengineering 396, Information Engineering 396, Materials Engineering 396, and Systems Engineering 396. Introdution to engineering economics, legal and social constraints on design, safety and reliability theory, and the use of simulation and optimization techniques in the engineering design process. Prerequisites: Senior standing and completion of all core requirements in the College of Engineering.

397. SENIOR DESIGN II. 4 HOURS. Same as Bioengineering 397, Information Engineering 397, Materials Engineering 397, and Systems Engineering 397. Application of principles of engineering and engineering design methodology to the solution of a large-scale design problem. May be taken in any department, regardless of area of concentration. Prerequisite: EnrE 396.

Information Engineering

Professors: Bruce H. McCormick, PhD, Head of the Department; Robert C. Arzbaecher, PhD; Giorgio Franceschetti, PhD (Visiting); Earl E. Gose, PhD; Philip Parzen, PhD; Chathilingath K. Sanathanan, PhD; Piergiorgio L.E. Uslenghi, PhD; Bert L. Zuber, PhD.

Associate Professors: Shi-Kuo Chang, PhD; Roger C. Conant, PhD; Philip L. Katz, PhD; Sharadbabu R. Laxpati, PhD; Chu-Quon Lee, PhD; Glenn K. Manacher, PhD; Tadao Murata, PhD; Roland Priemer, PhD; Henry A. Setton, MIE; Herbert J. Stein, PhD.

Assistant Professors: Ashok T. Amin, PhD (Visiting); Yungteh P. Chien, PhD; Thomas A. DeFanti, PhD. William DeFotis, MS; Robert A. Dell, Jr., PhD; Yong-Kyung Lee, PhD; Brian Phillips, PhD; Shashikant M. Sanzgiri, PhD (Visiting); John L. Semmlow, PhD; Steven A. Vere, PhD.

Instructors: Allen A. Sandberg, MS.

Areas of Concentration

Communication Engineering
Computer and Information Systems
Electromagnetic and Electronic Engineering

The Department of Information Engineering engages in teaching and research in the general area of information processing. The discipline treats the generation, coding, transmission, and analysis and storage of information. This involves the study of devices, circuits, channels, programming, processors, and networks—with applications to physical, biological, and social (particularly urban) systems. The three areas of concentration mainly associated with the Department of Information Engineering span different portions of this spectrum of study. Communication Engineering provides a concise approach to communication processes and control, and bridges the gap between the computer-science orientation of the curriculum in Computer and Information Systems and the broad study of electrical devices of the Electromagnetic and Electronic Engineering curriculum.

Communication Engineering—*Bachelor of Science in Engineering*

Area Advisers: Ashok T. Amin, Robert C. Arzbaecher, Philip L. Katz, Chu-Quon Lee, Tadao Murata, Philip Parzen, Roland Priemer, Chathilingath K. Sanathanan, Piergiorgio L.E. Uslenghi.

In this area of concentration the junior year provides a concise, modern approach to several area of communication engineering including signal processing, linear systems analysis, communication systems theory, electronics, and transmission lines. Senior level work is taken in two of the following areas: antennas and propagation, communications, controls, electronics, or networks.

Third Year

First Quarter	*Hours*
InfE 212—Signal Processing	4
InfE 320—Transmission Lines	4
Phys 231—Modern Physics I	4
Humanities or social sciences elective	4
	16

Second Quarter	
InfE 311—Linear Systems Analysis	4
InfE 271—Digital Systems	4
Phys 232—Modern Physics II	5
Humanities or social sciences elective	4
	17

Third Quarter

InfE 312—Introduction to Communication Engineering	4
InfE 340—Electronic Circuits	4
Humanities or social sciences elective	4
Free elective	4
	16

Fourth Year

First Quarter

	Hours
Information engineering elective*	4
Humanities or social sciences elective	4
Free electives	8
	16

Second Quarter

InfE 396—Senior Design I	4
Information engineering electives*	8
Humanities or social sciences elective	4
	16

Third Quarter

InfE 397—Senior Design II	4
Information engineering elective*	4
Free electives	8
	16

*Select two sequences from:

InfE 321—Electromagnetic Fields
InfE 325—Antenna Engineering and Wave Propagation

InfE 330—Communication Theory I
InfE 331—Communication Theory II
or
InfE 332—Computer Communications

InfE 360—Automatic Control Theory I
InfE 361—Automatic Control Theory II

InfE 344—Electronic Switching, Timing, and Pulse Circuits
InfE 345—Integrated Circuit Applications and Systems
or
InfE 346—Semiconductor Electronics

InfE 315—Intermediate Network Analysis
InfE 316—Introduction to Network Synthesis

Computer and Information Systems—*Bachelor of Science in Engineering*

Area Advisers: Shi-Kuo Chang, Yungteh P. Chien, Roger C. Conant, Thomas A. DeFanti, Robert A Dell, Bruce H. McCormick, Glenn K. Manacher, Brian Phillips, Stephen A. Vere.

This area of concentration provides basic instruction in the theory, design, and applications of computers and information processing techniques. Beginning in the junior year, a student takes a series of fundamental courses in the principles of information processing: signal processing, information structures, and computer systems. Later the student can complete a block of courses with increased emphasis on the design of digital systems: Option A —the computer systems option. Alternatively, the student can choose to emphasize software design, data base management, and artificial intelligence: Option B—the components of the information systems option. Students may use their elective courses to broaden their understanding of either computer or information interests or in the application of computers.

Third Year

First Quarter	*Hours*
InfE 212—Signal Processing	4
InfE 270—Information Structures	4
Phys 231—Modern Physics I	4
Humanities or social sciences elective	4
	16

Second Quarter	
InfE 311—Linear Systems Analysis	4
Phys 232—Modern Physics II	5
InfE 370—Computer Systems	4
Humanities or social sciences elective	4
	17

Third Quarter	
Option A—Information engineering elective*	4
Option B—InfE 271—Digital Systems	4
Math 348—Linear Transformations and Matrices	5
Humanities or social sciences elective	4
Free elective	4
	17

Fourth Year

First Quarter	*Hours*
Option A—InfE 302—File and Communication Systems	4
Option B—InfE 340—Electronic Circuits	4
Option A—Information engineering elective*	4
Option B—InfE 371—Switching Networks and Logical Design	4
Humanities or social sciences elective	4
Free electives	4
	16

Second Quarter	
Option A—InfE 374—Software Design	4
Option B—Information engineering elective*	4
InfE 396—Senior Design I	4
Humanities or social sciences elective	4
Free elective	4
	16

Third Quarter

Option A InfE 375—Artificial Intelligence I	4
Option B—Information engineering elective*	4
InfE 397—Senior Design II	4
Free electives	8
	16

*Select from:

InfE 300—Design Automation
InfE 307—Pattern Recognition
InfE 332—Computer Communications
InfE 376—Artificial Intelligence II
MatE 280—Problem-Oriented Languages
Math 281—Assembly Language Programming
Math 370—Introduction to Probability
Math 387—Numerical Analysis I
Math 395—List-Processing Languages
SysE 342—Experimental Design
SysE 350—Stochastic Processes
SysE 371—Optimization Techniques I
Option B if in Option A
Option A if in Option B

Electromagnetic and Electronic Engineering—*Bachelor of Science in Engineering*

Area Advisers: Ashok T. Amin, Robert C. Arzbaecher, Robert A. Dell, Sharadbabu R. Laxpati, Chu-Quon Lee, Yong-Kyung Lee, Philip Parzen, Shashikant M. Sanzgiri, Piergiorgio L.E. Uslenghi.

This area of concentration deals with a broad study of electrical devices. Students can specialize in one or more of three areas: electronics, electromagnetics, and electromechanics. During the senior year, students may plan advanced work in microwave devices, antennas and radiating systems, semiconductor devices, and electronic circuit design of components, instruments, and systems used widely by government and industry.

Third Year

First Quarter	*Hours*
InfE 212—Signal Processing	4
InfE 320—Transmission Lines	4
Phys 231—Modern Physics I	4
Humanities or social sciences elective	4
	16

Second Quarter	
InfE 311—Linear Systems Analysis	4
InfE 321—Electromagnetic Fields	4
InfE 271—Digital Systems	4
Phys 232—Modern Physics II	5
	17

Third Quarter

InfE 340—Electronic Circuits	4
InfE 346—Semiconductor Electronics	4
Humanities or social sciences elective	4
Free elective	4
	16

Fourth Year

First Quarter	*Hours*
Information engineering elective*	4
Humanities or social sciences elective	4
Free electives	8
	16

Second Quarter

InfE 396—Senior Design I	4
Information engineering elective*	4
Humanities or social sciences elective	4
Free elective	4
	16

Third Quarter

InfE 397—Senior Design II	4
Information engineering elective*	4
Humanities or social sciences elective	4
Free elective	4
	16

*Select from:

InfE 324—Principles of Microwaves
InfE 325—Antenna Engineering and Wave Propagation
InfE 326—Microwave Semiconductor Electronics
InfE 327—Modern Linear Optics
InfE 344—Electronic Switching, Timing, and Pulse Circuits
InfE 345—Integrated Circuit Applications and Systems
InfE 347—Thin Film Devices
InfE 348—Field Effect Devices
EnrE 351—Electromechanical Energy Conversion I
EnrE 352—Electromechanical Energy Conversion II
EnrE 353—Direct Energy Conversion

Courses (InfE)

201. HISTORY OF ENGINEERING. 4 HOURS. Important elements in the growth of the art and science of engineering from ancient times to the present. Lives of some of the leaders. The effect of engineering on the social conditions of the various periods. Prerequisite: Junior standing or consent of the instructor.

210. INTRODUCTION TO CIRCUIT THEORY. 4 HOURS. Kirchhoff's laws; node and loop methods for network analysis; network theorems; power and energy; energy storage elements; exponential signals and linear differential equations; initial conditions; forced responses; network functions. Prerequisite: Credit or registration in InfE 211, Phys 132, and Math 220.

211. INTRODUCTION TO CIRCUIT THEORY LABORATORY. 1 HOUR. Experimental counterpart of Information Engineering 210. Electronic instruments; electrical components; measurement methods; experiments in electrical circuits. Prerequisite: Credit or registration in InfE 210.

212. SIGNAL PROCESSING. 4 HOURS. Exponential excitations and responses; signal representation in terms of Fourier series, Fourier transforms, bilateral and unilateral Laplace transforms; applications. Prerequisite: InfE 210.

240. INTRODUCTION TO ELECTRONICS AND ELECTRONIC SYSTEMS. 4 HOURS. Comprehensive view of fundamental principles and processes underlying analysis and design of modern electronic systems; information transmission, current flow in solids, p-n junction, transistor models, and applications. Three hours per week of laboratory experience and problem-solving illustrating these principles. Prerequisites: InfE 210, 211.

259. NEUROBIOLOGY. 4 HOURS. Same as Bioengineering 259 and Biological Sciences 259. Introduction to basic anatomical and physiological concepts of the human central nervous system. Prerequisites: One year of biological sciences and senior standing or consent of the instructor.

270. INFORMATION STRUCTURES. 4 HOURS. Basic concepts of information. Modeling structures: linear lists, multilinked structures. Machine-level implementation structures. Storage management. Programming language implementation structures. Sorting and searching. Examples. Prerequisite: Math 195.

271. DIGITAL SYSTEMS. 4 HOURS. Introduction to switching system design using integrated circuit modules at the register transfer level. Analysis of logical subsystems and control structures employed in communications, computer, and numerical control applications. Prerequisites: Math 195, InfE 240.

272. MINICOMPUTER PROGRAMMING. 4 HOURS. Design and implementation of minicomputer based software. Interrupt programming. Peripheral device interfacing software. Interactive console debugging. Single and multiuser systems. Comparisons with micro- and maxicomputers. Prerequisite: Math 195.

289. COOPERATIVE ENGINEERING PRACTICE. 0 HOURS. Same as Energy Engineering 289, Materials Engineering 289, and Systems Engineering 289. Off-campus participation in a government or industrial training program. Prerequisite: Enrollment in the cooperative engineering program.

290. COOPERATIVE ENGINEERING SEMINAR. 1 HOUR. Same as Energy Engineering 290, Materials Engineering 290, and Systems Engineering 290. Lectures and seminar for students in the cooperative engineering program. Prerequisite: InfE 289, taken during the previous term.

292. UNDERGRADUATE RESEARCH. 2 TO 4 HOURS. Research under the close supervision of a faculty member. Prerequisite: Consent of the instructor.

300. DESIGN AUTOMATION. 3 HOURS. Concepts of systems that utilize computer techniques in support of the design and development of technologically oriented products. Engineer/computer interaction, requirements for design-oriented data base construction, simulation, testing, and automated repair fundamentals. Applications to electronic digital systems. Prerequisites: InfE 271 and either 371 or consent of the instructor.

302. FILE AND COMMUNICATION SYSTEMS. 4 HOURS. Same as Systems Engineering 302. Functions. File system hardware and organization and structure.

Analysis of file systems. Data management systems. Communication system hardware and organization and structure. Analysis of communication systems. Examples of integrated systems. Prerequisite: InfE 370.

306. NATURAL LANGUAGE PROCESSING. 4 HOURS. Automatic analysis of natural language. The adequacy of natural language models. Comparison of natural language with programming languages. Evaluation of language processing systems. Parsing. Machine understanding of language. Question-answering. Machine translation. Prerequisite: InfE 375 or consent of the instructor.

307. PATTERN RECOGNITION I. 4 HOURS. Same as Bioengineering 307 and Systems Engineering 307. The design of automated classification systems. Decision theory. Parametric and nonparametric procedures for the classification of patterned data sets. Clustering and unsupervised learning. Prerequisite: SysE 342 or Math 370.

311. LINEAR SYSTEMS ANALYSIS. 4 HOURS. Application of signal representations discussed in Information Engineering 212 to the analysis of linear systems; transform methods and frequency analysis; natural response; stability; signal flow graphs; Laplace transform with two variables; convolution integral and applications. Prerequisite: InfE 212.

312. INTRODUCTION TO COMMUNICATION ENGINEERING. 4 HOURS. Introduction to communication systems; amplitude, frequency, and pulse-type modulation, time and frequency multiplexing, noise calculations and signal to noise ratio. Prerequisites: InfE 212, 240, and concurrent registration in InfE 340.

315. INTERMEDIATE NETWORK ANALYSIS. 4 HOURS. Network theorems; introduction to topological approaches in general linear network analysis; loop, node, and state variable equations; network functions; the positive real concept. Prerequisite: InfE 311.

316. INTRODUCTION TO NETWORK SYNTHESIS. 4 HOURS. Continues Information Engineering 315. Positive real functions; L-C synthesis; RC, RL, and RLC synthesis; filter design. Prerequisite: InfE 315.

320. TRANSMISSION LINES. 4 HOURS. Transmission line equations. Transient phenomena. Time-harmonic waves. Impedance charts. Microstrip transmission lines. Three-phase systems. Prerequisite: InfE 240.

321. ELECTROMAGNETIC FIELDS. 4 HOURS. Vector calculus. Maxwell's equations. Potentials. Wave propagation. Energy theorems. Reflection and refraction of plane waves. Introduction to radiation. Prerequisites: InfE 212, Math 220.

324. PRINCIPLES OF MICROWAVES. 4 HOURS. Analysis of guided waves. Rectangular and circular cylindrical waveguides. Coaxial lines. Dielectric rod microwave devices. Microwave network theory. Prerequisite: InfE 320, 321.

325. ANTENNA ENGINEERING AND WAVE PROPAGATION. 4 HOURS. Radiation from current elements. Scalar and vector formulation for radiation and scattering. Theorems of antenna analysis. Antenna impedance. Arrays. Prerequisite: InfE 321.

326. MICROWAVE SEMICONDUCTOR ELECTRONICS. 4 HOURS. Varactor diodes, parametric devices, and harmonic generators. Tunnel, IMPATT, and Gunn diodes, with applications. Prerequisites: InfE 321, 346.

327. MODERN LINEAR OPTICS. 4 HOURS. Two-dimensional Fourier analysis, linear invariant systems, sampling theory. Applications of transfer functions to scalar diffraction, gratings and lenses. Frequency analysis of imaging systems. Spatial filtering and optical information processing. Holography and its applications. Prerequisite: InfE 321.

330. COMMUNICATION THEORY I. 4 HOURS. With Information Engineering 331, an introduction to statistical communication theory. Signal spectra, modulation, noise, probability theory; applications of statistics to communication systems. Prerequisite: InfE 312.

331. COMMUNICATION THEORY II. 4 HOURS. Continues Information Engineering 330. Prerequisite: InfE 330.

332. COMPUTER COMMUNICATIONS. 4 HOURS. Common-carrier data communication. Asynchronous time division multiplexing. Interfacing and data concentration. Multiple access communication. System design of computer networks. Optimum file allocation. Scheduling. Queuing and delays. Specific systems. Prerequisite: InfE 312.

340. ELECTRONIC CIRCUITS. 4 HOURS. Analysis and design of analog and digital electronic circuits; basic circuit properties, linear amplifiers, stability, operational and multistage configurations, tuned amplifiers and oscillators. Practical laboratory experience. Prerequisites: InfE 212, 240, Math 195.

344. ELECTRONIC SWITCHING, TIMING, AND PULSE CIRCUITS. 4 HOURS. Analysis of piecewise linear active networks; single time constant circuit evaluation; semiconductor devices as switching elements; clamping, coupling, regenerative switching, and linear sweep circuits; pulse transformers; negative-resistance devices. Prerequisites: InfE 212, 340.

345. INTEGRATED CIRCUIT APPLICATIONS AND SYSTEMS. 4 HOURS. Components in integrated circuits; digital integrated circuit families; linear wideband, differential, operational, and power amplifiers; operational amplifier design, analysis, and switching circuit applications; communication and data conversion circuits; digital information storage. Prerequisite: InfE 344.

346. SEMICONDUCTOR ELECTRONICS. 4 HOURS. Electron and hole transport mechanisms in semiconductor devices; quantum approach to distributions and statistics, recombination and generation, p-n junctions, and transistors; practical laboratory experience. Prerequisites: InfE 240 and credit or registration in Phys 232.

347. THIN FILM DEVICES. 4 HOURS. Introduction to vacuum technology. Methods of fabrication of films; sputtering, evaporation, electron beam evaporation, and chemical deposition. Physical properties of films. Application of such films as resistor, capacitor, transistor, diode, magnetic memory devices, and superconductors. Prerequisites: InfE 340, 346.

348. FIELD EFFECT DEVICES. 4 HOURS. Electronic processes in surface-controlled semiconductor and dielectric devices. Properties of MIS field effect capacitors and transistors, surface and interface effects, and fabrication techniques. Prerequisites: MatE 230, InfE 340, 346.

352. BIOCONTROL. 3 HOURS. Same as Bioengineering 352. Applicability of control systems theory to physiological systems, including the pupil system and eye

and hand movement systems, utilizing such techniques as Fourier analysis, Nyquist stability criteria, and cross-correlation. Prerequisites: InfE 311 and 383 or 384 or consent of the instructor.

353. BIOCONTROL LABORATORY. 3 HOURS. Same as Bioengineering 353. Experimental counterpart of Information Engineering 352. Motor coordination, crayfish photoreceptor, human pupil, eye movement. Prerequisite: Credit or registration in InfE 352.

354. BIOINSTRUMENTATION: TRANSDUCERS. 4 HOURS. Same as Bioengineering 354. Energy conversion; detailed discussion of transducers used in biological research. Prerequisites: BioE 200, InfE 240, 311.

359. NEUROANATOMY. 5 HOURS. Same as Bioengineering 359 and Biological Sciences 359. Introduction to the neurological organization of the mammalian central nervous system. Prerequisites: BioS 280 and consent of the instructor.

360. AUTOMATIC CONTROL THEORY I. 4 HOURS. Introductory mathematical preliminaries of control systems. Concept of feedback; transfer functions of typical electrical, mechanical, and hydraulic control systems; state variable representation of systems; signal flow graphs; implications of feedback on system performance; time domain analysis; stability concepts, including Lyapunov, Routh-Hurwitz, and Nyquist stability criteria. Laboratory assignments include experimental determination of the response of typical control systems and analog computer simulations. Prerequisite: InfE 311 or SysE 315.

361. AUTOMATIC CONTROL THEORY II. 4 HOURS. Continues Information Engineering 360. Introduction to the design of feedback control systems. Frequency response methods, root locus, Nichols chart, compensation techniques. Introduction to modern control theory, matrix representation of linear systems and mode interpretations, concepts of controllability and observability, and linear time-varying systems. Projects involving intensive studies on servo systems and extensive simulations on digital or analog computers. Prerequisite: InfE 360.

370. COMPUTER SYSTEMS. 4 HOURS. Hardware modules. Execution software. Operation software. Data and program handling software. Multiprogramming and multiprocessing environments. Prerequisite: InfE 270.

371. SWITCHING NETWORKS AND LOGICAL DESIGN. 4 HOURS. Basic concepts common to digital systems. Coding and representation of information, nondecimal number systems, switching algebra, combinational logic, electronic implementation and representation of logic, minimization techniques, analysis and synthesis of asynchronous and synchronous sequential networks, error-correcting codes, hazards and races due to logical circuit delays. Prerequisite: InfE 271.

372. ADVANCED DIGITAL SYSTEMS. 4 HOURS. Digital system design on the register transfer level. Design description and verification using hardware. Description language translater and simulater. Introduction to minicomputer, microcomputer, and microprocessor architectures. Discussions of storage devices, peripheral devices, interface design, microprogramming, microoperations, and control sequence by means of a hardware description language. Prerequisite: InfE 271.

373. DATA BASE SYSTEMS. 4 HOURS. An integrated approach to the design of data base systems: structural elements, design guidelines, accessing techniques,

hiearchical data base, plex-structured data base. Relational data bases and their implementation. Data base security. Case studies. System evaluation. Prerequisite: InfE 302.

374. SOFTWARE DESIGN. 4 HOURS. Run-time structures in programming languages. Communication, linking, and sharing of programs and data. Interface design. Program documentation, debugging, and testing. Programming style and esthetics. Selected examples. Prerequisite: InfE 302.

375. ARTIFICIAL INTELLIGENCE I. 4 HOURS. Introduction. Review of heuristic problem-solving in game-playing, theorem-proving, language-understanding, computer vision. Problem representation; predicate calculus problem-solving methods; heuristic search techniques. Individual projects are required. Prerequisites: Junior standing and Math 194 or 195, or consent of the instructor.

376. ARTIFICIAL INTELLIGENCE II. 4 HOURS. Semantic information processing. Procedural representation of knowledge. Computer representaion of meaning and common sense. Current topics. Individual projects are required. Prerequisite: InfE 375.

377. COMPUTER VISION I. 4 HOURS. Principles of interacting image processing by computer. Electro-optical array sensors. Image coding and bandwidth compression techniques. Scene segmentation strategies for two-dimensional images. Analysis of polyhedral scenes in three dimensions. Link to computer graphics. Prerequisites: InfE 270, 311.

378. COMPUTER GRAPHICS I. 4 HOURS. Same as Systems Engineering 378. Principles of interactive computer graphics. Discussion of display devices, display files, and interactive graphical techniques. Treatment of graphical structures in two-dimensions. Prerequisites: SysE 150, InfE 270.

379. REAL-TIME DATA PROCESSING. 4 HOURS. Theory and techniques of data processing using analog and digital computers. Emphasis on the unique computational problems presented by biological data, illustrating the practical use of communication theory. Prerequisites: Math 195, 220.

391. SEMINAR. 1 TO 4 HOURS. May be repeated for credit. Topics of mutual interest to a faculty member and a group of students. Offered as announced by department bulletin or the Timetable. Prerequisite: Consent of the instructor.

393. SPECIAL PROBLEMS. 2 TO 4 HOURS. May be repeated for credit. Special problems or reading by arrangement with the faculty. Prerequisite: Senior standing or consent of the instructor.

396. SENIOR DESIGN I. 4 HOURS. Same as Bioengineering 396, Energy Engineering 396, Materials Engineering 396, and Systems Engineering 396. Introduction to engineering economics, legal and social constraints on design, safety and reliability theory, and the use of simulation and optimization techniques in the engineering design process. Prerequisites: Senior standing and completion of all core requirements in the College of Engineering.

397. SENIOR DESIGN II. 4 HOURS. Same as Bioengineering 397, Energy Engineering 397, Materials Engineering 397, and Systems Engineering 397. Application of principles of engineering and engineering design methodology to the solution of a large-scale design problem. May be taken in any department, regardless of area of concentration. Prerequisite: InfE 396.

Materials Engineering

Professors: Ernest F. Masur, PhD, Head of the Department; Thomas H. Blewitt, ScD; Robert F. Domagala, MS; John E. Goldberg, PhD (Visiting); David W. Levinson, PhD; Norman A. Parker, MS (Emeritus); William Rostoker, PhD; Albert B. Schultz, PhD; Surendra P. Shah, PhD; Thomas C.T. Ting, PhD; Frederick W. Trezise, MA (Emeritus); Georg E.O. Widera, PhD; Chien H. Wu, PhD.

Associate Professors: Ted B. Belytschko, PhD; Robert H. Bryant, PhD; Edward H. Coe, CE (Emeritus); Thomas W. Haas, PhD; Dusan Krajcinovic, PhD; Donald G. Lemke, PhD; Paul E. Mast, PhD (Adjunct); Roy B. Perkins, MS; Daniel F. Schoeberle, PhD; Marshall L. Silver, PhD; Charles A. Timko, PhD (Adjunct).

Assistant Professors: Minoru Arita, PhD (Visiting); Graham M. Brown, PhD; Krishna C. Gupta, PhD; Antoine E. Naaman, PhD; Michael J. Weins, PhD.

Adjunct Research Professors: Jorge O. Galante, MD.

Areas of Concentration

Applied Mechanics
Manufacturing Engineering
Mechanical Analysis and Design
Metallurgy
Structural Engineering and Materials

These areas of concentration are mainly associated with the Department of Materials Engineering. The department introduces all engineering students to fundamental concepts of dynamics and stress-and-strain analysis and acquaints them with the basic properties of materials and their utilization. Its specialized undergraduate and graduate courses then cover the same disciplines in greater depth, in addition to their application to the analysis and design of structures, machines, and manufacturing processes and of foundations and their interaction with soils. The properties and uses of metals and their design to meet new demands are covered in the metallurgy sequence.

Applied Mechanics—*Bachelor of Science in Engineering Science*

Area Adviser: Chien H. Wu.

This area of concentration represents one of the principal foundations of engineering science; accordingly, a student following a curriculum in applied mechanics is exposed to a broad introduction to the scientific basis of much of modern engineering practice and research. Graduates with this specialty enter a variety of industries in positions involving research and development. In addition, the emphasis on analytical and experimental research makes further study at the graduate level more desirable and likely.

The required courses consist primarily of offerings in the Departments of Materials Engineering, Energy Engineering, and Mathematics, with introductions to the fundamentals of solid and fluid mechanics and to the mathe-

matical tools needed for these disciplines. Free electives may be used for professional specialization; review and synthesis finally take place in the formal design sequence.

Third Year

First Quarter	*Hours*
Phys 231—Modern Physics I	4
MatE 204—Mechanics of Solids I	4
MatE 211— Dynamics of Rigid Bodies	4
Humanities or social sciences elective	4
	16

Second Quarter	
Phys 232—Modern Physics II	5
MatE 206—Mechanics of Solids III	4
MatE 208—Mechanical Vibrations	4
Humanities or social sciences elective	4
	17

Third Quarter	
EnrE 212—Potential Flow	4
MatE 341—Experimental Methods in Solid and Fluid Mechanics	4
Humanities or social sciences elective	4
Free elective	4
	16

Fourth Year

First Quarter	*Hours*
EnrE 214—Viscous Fluid Mechanics	4
MatE 311—Intermediate Dynamics	4
Humanities or social sciences elective	4
Free elective	4
	16

Second Quarter	
MatE 316—Introduction to Continuum Mechanics	4
MatE 396—Senior Design I	4
Math 310—Advanced Calculus I	4
Free elective	4
	16

Third Quarter	
MatE 397—Senior Design II	4
Free electives	12
	16

Manufacturing Engineering—*Bachelor of Science in Engineering*

Area Advisers: Robert F. Domagala, Thomas W. Haas, David W. Levinson.

The manufacture of finished products involves interrelationships among machine design, machine control, fabrication, and service properties of ma-

terials as they relate to efficiency, productivity, quality, and cost. This area of concentration includes courses in basic machine-design principles associated with measuring and machine capability, the application of computer methods and related equipment to machine control, the influence of materials on the process and vice versa, the selection of materials to meet service requirements, and the relation of economics to materials and process selection.

This specialization is aimed at educating engineers to enter the wide spectrum of manufacturing industries engaged in producing finished components and assemblies of components that represent marketable products.

Third Year

First Quarter	*Hours*
Phys 231—Modern Physics I	4
MatE 249—Materials Removal Processing	4
Humanities or social sciences elective	4
Free elective	4
	16

Second Quarter	
Phys 232—Modern Physics II	5
QM 270—Statistics I	4
Humanities or social sciences elective	4
Free elective	4
	17

Third Quarter	
MatE 246—Numerical Control Processing	4
MatE 248—Materials Processing I	4
Humanities or social sciences elective	4
Free elective	4
	16

Fourth Year

First Quarter	*Hours*
MatE 396—Senior Design I	4
MatE 360—Deformation Processing	4
Mgmt 340—Organization Theory I	4
Humanities or social sciences elective	4
	16

Second Quarter	
MatE 333—Design Use of Materials	4
MatE 244—Materials Processing II	4
MatE 361—Deformation Processing Laboratory	2
MatE 272—Measurement Reliability in Manufacturing	4
Free elective	4
	18

Third Quarter	
MatE 255—Physical Metallurgy Laboratory III	1
MatE 245—Materials Processing Laboratory II	1
MatE 397—Senior Design II	4
Humanities or social sciences elective	8
	14

Mechanical Analysis and Design—*Bachelor of Science in Engineering*

Area Advisers: Graham M. Brown, Krishna Gupta, Donald G. Lemke, Daniel F. Schoeberle, Albert B. Schultz.

This area of concentration acquaints a student with the fundamental disciplines involved in the design of machinery. An engineering graduate with this option is likely to be employed by any one of many manufacturing industries.

To afford students a wide choice in the selection of a career as well as to enable them to keep up with developments in industry after graduation, this option emphasizes fundamentals that include the study of stress analysis, mechanical vibrations, and mechanisms, and the design use of materials. In the senior year, a student completes a comprehensive design project in which the knowledge accumulated in previous course work is utilized and synthesized. The problems selected are often taken from actual industrial job assignments and their solutions are viewed against the same type of background.

Third Year

First Quarter	*Hours*
Phys 231—Modern Physics I	4
MatE 204—Mechanics of Solids I	4
MatE 211—Dynamics of Rigid Bodies	4
Humanities or social sciences elective	4
	16

Second Quarter	
Phys 232—Modern Physics II	5
MatE 206—Mechanics of Solids III	4
MatE 209—Analysis and Synthesis of Mechanisms	4
Humanities or social sciences elective	4
	17

Third Quarter	
MatE 241—Experimental Methods in Solids and Fluid Mechanics	4
MatE 208—Mechanical Vibrations	4
Humanities or social sciences elective	4
Free elective	4
	16

Fourth Year

First Quarter	*Hours*
MatE 311—Intermediate Dynamics	4
MatE 396—Senior Design I	4
Humanities or social sciences elective	4
Free elective	4
	16

Second Quarter

MatE 313—Applied Dynamics	4
MatE 333—Design Use of Materials	4
Free electives	8
	16

Third Quarter

MatE 397—Senior Design II	4
Senior technical elective*	4
Free electives	8
	16

*Choose from MatE 282, 304, 308, 383.

Metallurgy—*Bachelor of Science in Engineering*

Area Advisers: Robert F. Domagala, David W. Levinson, William Rostoker.

In addition to the production of materials, metallurgists are employed in the developmental and manufacturing aspects of the machine, automotive, aircraft, chemical, electronic, and electrical industries. In this area of concentration, approximately one-half of the allocated hours is devoted to engineering science (physics of metals, physical metallurgy, thermodynamics, and investigative techniques) and the remainder to technology (deformation processing, casting, joining, heat treatment, design use, and extraction from minerals). In addition, students are encouraged to enrich their education in the areas of machining, computer techniques, cost analysis, and operations analysis.

Third Year

First Quarter	*Hours*
Phys 231—Modern Physics I	4
MatE 250—Physical Metallurgy I	3
MatE 253—Physical Metallurgy Laboratory I	1
Humanities or social sciences electives	8
	16

Second Quarter

Phys 232—Modern Physics II	5
MatE 251—Physical Metallurgy II	3
MatE 254—Physical Metallurgy Laboratory II	1
MatE 243—Metallurgical Problems	5
Humanities or social sciences elective	4
	18

Third Quarter

MatE 252—Physical Metallurgy III	3
MatE 255—Physical Metallurgy Laboratory III	1
MatE 248—Materials Processing I	4
Humanities or social sciences elective	4
Free elective	4
	16

Fourth Year

First Quarter	*Hours*
MatE 239—X-Ray Metallography	3
MatE 360—Deformation Processing	4
MatE 396—Senior Design I	4
Free elective	4
	15

Second Quarter	
MatE 244—Materials Processing II	4
MatE 361—Deformation Processing Laboratory	2
MatE 333—Design Use of Materials	4
Humanities or social sciences electives	8
	18

Third Quarter	
MatE 245—Materials Processing Laboratory II	1
MatE 291—Undergraduate Seminar	1
MatE 397—Senior Design II	4
Free electives	8
	14

Structural Engineering and Materials—*Bachelor of Science in Engineering*

Area Advisers: Ted Belytschko, Robert H. Bryant, Dusan Krajcinovic, Antoine Naaman, Surendra P. Shah.

With the advent of the electronic computer, the function of the structural designer has undergone a fundamental change. Routine calculations, drafting, and other necessary chores are now largely delegated to non-engineers. The structural engineer, with the help of the computer, concentrates on the true job of "design," that is, to determine the best possible solution to satisfy the needs of society for housing, hospitals, factories, bridges, and other structures.

These changes are incorporated in the structural options. In addition to a brief introduction to the design practices and codes that affect various common structural materials, such as steel and reinforced concrete, the program primarily emphasizes structural theory, the properties of structural materials, and the use of the computer for solving problems in design.

Because of the breadth of the subject and the wide variety of possible job selections, students in this option are given some choice of further specialization. They may, for example, concentrate on courses that emphasize the structural design practices that relate to the construction industry or they may study more advanced aspects of structural theory to be able to handle the more exacting requirements of such structures as airplanes or nuclear containers. Finally, they may select additional courses in soil mechanics in preparation for a career as a soil and geotechnical engineer.

Third Year

First Quarter	*Hours*
Phys 231—Modern Physics I	4
MatE 204—Mechanics of Solids I	4
MatE 260—Soil Behavior	4
Humanities or social sciences elective	4
	16

Second Quarter	
Phys 232—Modern Physics II	5
MatE 205—Mechanics of Solids II	4
MatE 261—Foundation Engineering	4
Humanities or social sciences elective	4
	17

Third Quarter	
MatE 207—Structural Analysis I	4
MatE 222—Composition and Properties of Concrete	4
Humanities or social sciences elective	4
Free elective	4
	16

Fourth Year

First Quarter	*Hours*
MatE 221—Behavior and Design of Metal Structures	4
MatE 225—Design of Reinforced Concrete Structures	4
Humanities or social sciences elective	4
Senior technical elective*	4
	16

Second Quarter	
MatE 396—Senior Design I	4
Senior technical elective*	4
Free electives	8
	16

Third Quarter	
MatE 397—Senior Design II	4
Free electives	12
	16

*Choose from MatE 302, 316, 321, 322, 324, 325, 326, 327, 344, 370, 371, 372, 373

Courses (MatE)

200. STATICS AND DYNAMICS. 4 HOURS. Statics of particles and rigid bodies; kinematics and dynamics of particles. Work and law of kinetic energy, law of impulse-momentum. Prerequisites: Math 132, Phys 131.

201. INTRODUCTION TO SOLID MECHANICS. 3 HOURS. Analysis of stress and strain, principal stresses and strains. Constitutive laws of elastic and selected types of inelastic materials. Strain energy and failure criteria. Simple problems of stress and deformation analysis. Prerequisites: MatE 200, Math 133.

202. MATERIALS AND MECHANICS LABORATORY. 2 HOURS. Introduction to experimental techniques; particular reference to material behavior. Prerequisites: MatE 201, 230.

204. MECHANICS OF SOLIDS I. 4 HOURS. Elementary solutions describing the behavior of an elastic body. Engineering approximations: bending, torsion, and buckling. Prerequisites: MatE 201, Math 133.

205. MECHANICS OF SOLIDS II. 4 HOURS. Introduction to structural energy principles: virtual work, potential energy, complementary energy, reciprocity. Application to beams, frames, trusses, beam columns, and the like. Prerequisite: MatE 204.

206. MECHANICS OF SOLIDS III. 4 HOURS. Plane problems of elasticity and simple solutions in Cartesian and polar coordinates. Engineering approximations: thin-walled pressure vessels, torsion of thin-walled sections, curved beams. Extension to inelastic materials. Prerequisite: MatE 204.

207. STRUCTURAL ANALYSIS I. 4 HOURS. Analysis of statically determinate and indeterminate structures. Slope-deflection and moment distribution methods. Approximate analysis of frames. Frame stability. Special structures. Term project. Field trip. Prerequisite: MatE 205.

208. MECHANICAL VIBRATIONS. 4 HOURS. Free and forced vibrations of damped and undamped linear single and multiple degree-of-freedom systems. Approximate methods, instrumentation, and applications. Prerequisites: MatE 200, Math 220.

209. ANALYSIS AND SYNTHESIS OF MECHANISMS I. 4 HOURS. Analytical and graphical analysis of plane and spatial motion. Geometrical and algebraic synthesis of mechanisms. Computer methods; applications. Prerequisite: MatE 211.

211. DYNAMICS OF RIGID BODIES. 4 HOURS. A first course. Angular velocity and acceleration, coriolis, transport and relative acceleration, moments and products of inertia, Newton's second law, Euler's equations, impulse and momentum. Prerequisite: MatE 200.

221. BEHAVIOR AND DESIGN OF METAL STRUCTURES. 4 HOURS. Design of metal structures; behavior of members and their connections; theoretical, experimental, and practical bases for proportioning members. Prerequisite: MatE 205.

222. COMPOSITION AND PROPERTIES OF CONCRETE. 4 HOURS. 3 hours, lecture; 2 hours, laboratory. Properties and types of cements and aggregates, hydration, mix design strength, deformation and durability of hardened concrete. Prerequisites: MatE 204, 230.

225. DESIGN OF REINFORCED CONCRETE STRUCTURES. 4 HOURS. Analysis and design of reinforced concrete structural elements: beams, columns, slabs, and the like. Use of current building codes. Prerequisites: MatE 207, 222.

230. PROPERTIES OF MATERIALS. 4 HOURS. Introduction to the relationships among composition, structural, physical, and mechanical properties of metals, ceramics, and polymers. Correlation with manufacturing processes, service performance, and materials selection. Prerequisites: Chem 113, Math 132, Phys 131.

239. X-RAY METALLOGRAPHY. 3 HOURS. X-ray generation and scattering. Applications of methods of X-ray diffraction to studies of crystallography and problems in physical metallurgy, such as phase identification, lattice parameter determination, grain size determination, preferred orientation, surface topography and residual stress determination. Prerequisite: MatE 230.

241. EXPERIMENTAL METHODS IN SOLID AND FLUID MECHANICS. 4 HOURS. Same as Energy Engineering 241. Introduction to the theory and practice of experimental methods, measurement techniques in solids and fluids, analysis of errors. Concurrent laboratory experiments and reports. Prerequisites: EnrE 211, MatE 201.

243. METALLURGICAL PROBLEMS. 5 HOURS. Theory and application of the laws of thermodynamics to metallic systems; problems concerning industrial and metallurgical processes. Prerequisites: EnrE 201 and completion of the chemistry common core sequence.

244. MATERIALS PROCESSING II. 4 HOURS. Principles and practices of casting and joining processes. Solidification of metals. Properties of mold materials. Diffusion bonding, brazing, and soldering. Prerequisite: MatE 230.

245. MATERIALS PROCESSING LABORATORY II. 1 HOUR. Experimental melting, casting, mold preparation, analysis of defects in sand, permanent mold, investment and shell castings, mold control, pattern design. Prerequisite: Credit or registration in MatE 244.

246. NUMERICAL CONTROL PROCESSING. 4 HOURS. Principles and application of numerical control as applied to numerous industrial processes. Application of servo systems used in numerical control. Design and use of computer programming for control of machines and processes. Prerequisite: Math 195.

248. MATERIALS PROCESSING I. 4 HOURS. Principles and practices of heat treating and surface treating of materials. Introduction to equipment and processes used in heat treating of steels and common nonferrous alloys and to carburizing, nitriding, and other surface treatments. Prerequisites: EnrE 201, 211, MatE 230.

249. MATERIALS REMOVAL PROCESSING. 4 HOURS. Laboratory and classroom study of manufacturing processes where metals or other materials are removed. Effects of the process on the finished product, the tooling, and the machine. Mechanics of metal cutting. Computer applications. Prerequisite: MatE 230.

250. PHYSICAL METALLURGY I. 3 HOURS. Part I of a three-course sequence. Principles and interpretation of phase diagrams; relationships between structure, thermal history, and properties. Prerequisite: MatE 230.

251. PHYSICAL METALLURGY II. 3 HOURS. Part II of a three-course sequence. Fundamental treatment of mechanical properties. Elastic behavior. Plastic behavior of single crystals. Elements of dislocation theory. Plastic behavior of polycrystalline aggregates. Fracture. Prerequisite: MatE 250.

252. PHYSICAL METALLURGY III. 3 HOURS. Part III of a three-course sequence. Diffusion, nucleation, and growth in freezing and solid state transformations. Recovery and recrystallization. Physical metallurgy of cast irons and alloy steels. Prerequisite: MatE 251.

253. PHYSICAL METALLURGY LABORATORY I. 1 HOUR. Part I of a three-course sequence. Principles and applications of tools and experimental procedures for metallurgical laboratory activity. Report writing is emphasized. Topics include solidification, heat treatment, mechanical and physical properties, metallography and photomicrography, analysis of microstructures and relationship to properties, cold work and annealing. Prerequisite: Registration in MatE 250.

254. PHYSICAL METALLURGY LABORATORY II. 1 HOUR. Part II of a three-course sequence. Principles and applications of tools and experimental procedures for metallurgical laboratory activity. Report writing is emphasized. Topics include solidification, heat treatment, mechanical and physical properties, metallography and photomicrography, analysis of microstructures and relationship to properties, cold work and annealing. Prerequisite: Registration in MatE 251.

255. PHYSICAL METALLURGY LABORATORY III. 1 HOUR. Part III of a three-course sequence. Principles and applications of tools and experimental procedures for metallurgical laboratory activity. Report writing is emphasized. Topics include solidification, heat treatment, mechanical and physical properties, metallography and photomicrography, analysis of microstructures and relationship to properties, cold work and annealing. Prerequisite: MatE 230.

260. SOIL BEHAVIOR. 4 HOURS. Origin of soil deposits and mineral composition of soils. Soil classification. Soil compaction. Soil as a three-phase system: effective and neutral stresses, effective stress principle. Soil water: permeability, capillarity, frost heaving. Consolidation. Lectures and laboratory. Prerequisite: MatE 202.

261. FOUNDATION ENGINEERING. 4 HOURS. The effect of subsurface soil conditions on choice of foundation. Subsurface soil exploration. Type of foundations: spread footings; mat; pile. Proportioning foundations for settlement and bearing capacity. Earth pressures. Design of rigid retaining structures: retaining walls; bracing of excavations. Prerequisite: MatE 260.

272. MEASUREMENT RELIABILITY IN MANUFACTURING. 4 HOURS. Laboratory approach to the use of measuring instruments and equipment. Use of computer methods for reliability, prediction, and quality assurance. Quality control implications relating to measurement practice. Prerequisite: MatE 246 or consent of the instructor.

282. DESIGN OF MACHINE ELEMENTS. 4 HOURS. Application of established methods of mechanics to the design of machine elements. Energy methods, curved beams, rotating disks, combined loading of shafts, springs, contact stresses. Prerequisites: Senior standing, MatE 204, 230.

289. COOPERATIVE ENGINEERING PRACTICE. 0 HOURS. Same as Energy Engineering 289, Information Engineering 289, and Systems Engineering 289. Off-campus participation in a government or industrial training program. Prerequisite: Enrollment in the cooperative engineering program.

290. COOPERATIVE ENGINEERING SEMINAR. 1 HOUR. Same as Energy Engineering 290, Information Engineering 290, and Systems Engineering 290. Lectures and seminar for students in the cooperative engineering program. Prerequisite: MatE 289, taken during the previous term.

291. UNDERGRADUATE SEMINAR. 1 TO 3 HOURS. Students conduct an in-depth study of areas of materials engineering that are of special interest to them. Oral and written reports are required. Prerequisite: Senior standing.

292. UNDERGRADUATE RESEARCH. 2 TO 4 HOURS. Research under the close supervision of a faculty member. Prerequisite: Consent of the instructor.

302. APPLIED ELASTICITY I. 4 HOURS. Variational theorems of elasticity theory. Application to establishment and solution of approximate systems: beams (including shear deformation) and plates. Introduction to instability theory. Prerequisite: MatE 205 or 206.

303. THEORY OF ELASTICITY I. 4 HOURS. The boundary value problems of linear isotropic elasticity theory. Uniqueness of solution. Reduction to two dimensions: the plane problem, torsion, bending. General orthogonal coordinates and special application to polar coordinates. Three-dimensional problems with axial symmetry. Prerequisite: MatE 316.

304. EXPERIMENTAL STRESS ANALYSIS. 4 HOURS. Structural similitude and dimensional analysis. Brittle coating. Introduction to photoelasticity. Strain measurement techniques. Prerequisite: MatE 206.

305. MECHANICAL INSTRUMENT TRANSDUCERS. 4 HOURS. Design and operation, calibration and environmental testing, input-output characteristics, digital output transducers. Prerequisites: InfE 240, MatE 241, 304.

307. TWO-DIMENSIONAL PHOTOELASTICITY. 4 HOURS. Theory and practice; birefringence in homogenous stress fields; analysis of complex two-dimensional stress fields. Prerequisites: MatE 304, 305.

308. INTERMEDIATE VIBRATION THEORY. 4 HOURS. Analytical and numerical treatment of vibrations induced in n-degree-of-freedom linear, discrete systems by perodic, shock, and random excitation. Prerequisite: MatE 208.

309. ANALYSIS AND SYNTHESIS OF MECHANISMS II. 4 HOURS. Advanced techniques for the analysis and synthesis of motion. Emphasis on planar mechanisms. Roberts-Chebyschev theorem, Euler-Savary equation. Type, number, and dimensional synthesis. Geometric and algebraic techniques. Applications, computational methods. Prerequisite: MatE 209.

311. INTERMEDIATE DYNAMICS. 4 HOURS. Kinematics of a point, space curves. Particle dynamics, orbital motion, moving reference frames. Rigid body dynamics. The inertia tensor, Euler's equations. Hamilton's principle. Generalized coordinates, LaGrange's equations. Prerequisites: MatE 211, Math 220.

312. NONLINEAR OSCILLATIONS. 4 HOURS. Exact and approximate methods of studying vibrations of nonlinear systems. Analytical and graphical techniques. Forced oscillations, self-excited systems, stability criteria. Computer methods. Practical applications. Prerequisite: MatE 208.

313. APPLIED DYNAMICS. 4 HOURS. Analytical methods in the study of dynamic forces in machines. Application of the methods to linkages, cam-systems, balancing, and critical speeds. Prerequisites: MatE 209, 311.

316. INTRODUCTION TO CONTINUUM MECHANICS. 4 HOURS. Same as Energy Engineering 316. Cartesian tensors, kinematics of fluids and solids, conservation equations, constitutive equations for simple materials. Examples. Prerequisites: EnrE 211 or MatE 204, Math 220.

321. STRUCTURAL ANALYSIS II. 4 HOURS. Establishment of basic equations governing linear structural systems. Matrix inversion and relaxation solutions. Approximate analyses. Introduction to dynamics of structures. Prerequisites: MatE 205, Math 195.

322. CONCRETE TECHNOLOGY. 4 HOURS. 3 hours, lecture; 2 hours, laboratory. Relations between microstructure and macroproperties, mechanism of fracture shrinkage and creep, new types of concrete, effects of environment and mixtures. Individual research project involving laboratory and analytic techniques. Prerequisite: MatE 203 or the equivalent.

324. LIMIT ANALYSIS AND DESIGN OF STRUCTURES. 4 HOURS. Boundedness principles of perfect plasticity. Application to analysis and design of structures. Prerequisite: MatE 207.

325. CONCRETE DESIGN OF SHELL AND PLATE STRUCTURES. 4 HOURS. Derivation of membrane and bending theories for shells of revolution, folded plates, and shells of single and double curvature. Application to barrel roofs, domes, and storage tanks. Prerequisites: Math 220 and MatE 225 or 302 or consent of the instructor.

326. DESIGN IN PRESTRESSED AND PRECAST CONCRETE. 4 HOURS. Behavior and design of prestressed and precast concrete structures. Prestressing systems; problems of shrinkage, creep, and anchorage. Design of beams, slabs, containment vessels, and piles. Design of precast concrete building systems. Prerequisite: MatE 225 or consent of the instructor.

327. RELIABILITY AND PROBABILITY IN STRUCTURAL DESIGN. 4 HOURS. Design of reinforced concrete and steel structures using reliability, probability, and statistical concepts. Common models of structural behavior. Predicting strength and load variabilities. Designing for specific levels of reliability. Prerequisites: MatE 207 and either 221 or 225.

328. STRUCTURAL DESIGN IN REACTOR ENGINEERING. 4 HOURS. Current design practices and the ASME Boiler and Pressure Vessel Code. Review and application of relevant topics associated with other structural and mechanics courses. Introduction to high temperature design and analyses. Structural components. Safety and reliability considerations. Prerequisite: MatE 205 or 206.

331. ELECTRON THEORY OF METALS. 3 HOURS. Modern physical concepts of metals and alloys. Introduction to wave mechanics. Thermal, electrical, and magnetic properties of metals. Band theory of metals. Prerequisite: MatE 252.

332. ADVANCED DIFFRACTION ANALYSIS. 3 HOURS. Single crystal methods in X-ray diffraction, orientation determination, pole figures, structure determination, precision lattice constant methods. Prerequisite: MatE 239 or the equivalent.

333. DESIGN USE OF MATERIALS. 4 HOURS. Extreme value statistics. Mechanical effects of a notch. Fracture mechanics. Fatigue. Stress rupture. Residual stress effects. Relationships to designed performance. Prerequisite: MatE 230.

334. METALLURGY OF NUCLEAR MATERIALS. 3 HOURS. Basic principles of nuclear reactors, fission, moderation, poisoning, radioactivity. Selection of materials for fuels, cladding, moderators, coolants, and shields with regard to a re-

actor environment. Radiation effects, heat transfer, environmental problems, reactor safety, and neutron conservation. Prerequisites: Phys 232 or the equivalent, MatE 252.

335. ELECTRON MICROSCOPY. 3 HOURS. The electron microscope and its application to the study of surface replicas and thin films of metals, alloys, and other materials. Sources of contrast. Selected area diffraction. Prerequisites: MatE 239, 252.

337. PROCESS METALLURGY OF IRON AND STEELMAKING. 4 HOURS. Physicochemical principles applied to reduction, conversion, and refining of steel and ferrous alloys. Applications of thermodynamics to equilibrium problems, such as slag-metal equilibria, and applications of process engineering principles to the dynamics behavior of various component systems, such as sinter plants, blast furnaces, and basic oxygen furnaces. Prerequisite: MatE 243 or consent of the instructor.

338. PARTICULATE SOLIDS PROCESSING. 4 HOURS. Same as Energy Engineering 338. Mathematical characterization of distribution of particle size; the population balance. Mechanical methods of size classification and size reduction. Energy consideration in the theory of grinding. Fluid-solid and solid-solid separation processes; fluidization of mixed solids, transport of suspensions of solids. Prerequisites: EnrE 211, MatE 230

339. ELECTRONIC MATERIALS PROCESSING. 4 HOURS. Methods germane to materials for electronics applications, including magnetic, dielectric, and strain-sensitive materials; semiconductor materials. Prerequisite: MatE 230.

340. CONSTRUCTION ENGINEERING. 4 HOURS. Same as Systems Engineering 340. Structure of the construction industry and construction projects. Review of the fundamentals and use of network-based systems, such as CPM and PERT, for the planning and control of construction projects. Methods for considering the effect of time and resource limitations on construction cost. Examples of applications taken from the construction, precast-prestressed, and mobile home industries. Prerequisite: Senior standing.

344. PHYSICAL-CHEMICAL PRINCIPLES OF SOIL BEHAVIOR I. 4 HOURS. Clay mineralogy, soil formation and composition, sedimentation, mineral identification, colloidal phenomena in soils. Prerequisite: MatE 260.

345. PHYSICAL-CHEMICAL PRINCIPLES OF SOIL BEHAVIOR II. 4 HOURS. Swelling, ion association, soil-water analysis of mechanical behavior of soils in terms of physiochemical principles of conduction phenomena. Prerequisite: MatE 344.

346. PHYSICAL-CHEMICAL PRINCIPLES OF SOIL BEHAVIOR III. 4 HOURS. Deformation mechanisms and strength, compaction, frost action, rate processes, such as secondary compression, creep, thixotropy. Prerequisite: MatE 345.

356. MATERIALS IN BIOENGINEERING. 4 HOURS. Same as Bioengineering 356. Analysis of materials problems associated with prostheses and other implanted devices, both medical and dental. Prerequisites: MatE 230, BioS 363 or 364.

360. DEFORMATION PROCESSING. 4 HOURS. Principles of deformation processes. Basic methods of problem-solving. Practices and process control. Relations between processing and finished properties. Prerequisites: MatE 201, 230.

361. DEFORMATION PROCESSING LABORATORY. 2 HOURS. Measurement and analysis of forces in forging, rolling, drawing, and deep drawing. Effects of material properties, process variables, and friction conditions. Prerequisites: MatE 202, 360.

362. POWDER METALLURGY. 4 HOURS. Physical attributes of fine powders. Mechanics of pressing. Theories of solid state sintering. Liquid phase sintering. Manufacturing aspects. Prerequisite: MatE 230 or consent of the instructor.

363. ADVANCED PHASE DIAGRAMS. 4 HOURS. Ternary phase equilibria in metal systems. Vertical and horizontal sections, methods of construction and interpretation. Examination of quaternary and more complex systems. Application of thermodynamic principles to construction. Prerequisite: MatE 250.

364. POLYMER PROPERTIES AND TECHNOLOGY. 4 HOURS. Polymer structure and properties. Characterization of polymeric materials. Polymer processing and manufacturing technology. Prerequisite: MatE 230.

367. CERAMICS TECHNOLOGY. 4 HOURS. An introductory course in ceramics for engineers. Ceramics as materials of technological importance are examined from the science, engineering, and manufacturing viewpoints. Crystalline and noncrystalline (glass) materials. Special emphasis on applications in industry. Prerequisite: MatE 230.

368. SOLIDIFICATION THEORY AND PRACTICE. 3 HOURS. Theory of solidification and its applications to problems in casting and refining of crystalline materials. Prerequisites: MatE 244, 248.

370. SOIL MECHANICS I. 4 HOURS. The nature of soils and soil deposits; stresses in soil masses; granular materials; stress-strain behavior and shear strength, earth pressures on retaining structures, bearing capacity and settlements of shallow foundations. Two laboratory exercises in stresses and settlements of shallow foundations. Prerequisite: MatE 260.

371. SOIL MECHANICS II. 4 HOURS. Concept of effective stress; seepage and pore pressures; stress-strain behavior and shear strength of drained cohesive materials; earth retaining structures; slope stability. One laboratory exercise in the principle of effective stress. Prerequisite: MatE 370.

372. SOIL MECHANICS III. 4 HOURS. Consolidation theory; stress-strain behavior and shear strength of undrained cohesive materials; soil-structure interaction; formulation and computer solution of field problems. Prerequisites: MatE 371, Math 195 or programming experience.

373. LABORATORY DETERMINATION OF SHEAR STRENGTH OF SOILS. 2 HOURS. Approximately 4 hours per week of laboratory-lecture. Prerequisite: Credit or concurrent registration in MatE 372.

381. NOISE AND VIBRATION CONTROL. 4 HOURS. Nature of sound as it relates to the control of vibration and wave propagation. Design procedure based on hearing, acoustical environment, acoustical materials, and soil dynamics. Legal and medical problems. Prerequisite: MatE 208 or the equivalent.

383. DESIGN OF FILM BEARINGS. 4 HOURS. Application of mechanics to the design of film bearings. Journal bearings. Thrust bearings. Slider bearings. Cavitation cooling requirements. Materials and manufacturing considerations. Prerequisites: EnrE 211, Math 220.

384. DESIGN IN MATERIAL PROCESSES. 3 HOURS. Design and optimization of chemical and mechanical metallurgical processing systems. Process modeling and analysis. Direct search linear and dynamic programming solutions of process problems. Economic analysis and investment strategy. Prerequisite: MatE 243 or 244 or EnrE 234.

391. SEMINAR. 1 TO 4 HOURS. May be repeated for credit. Topics of mutual interest to a faculty member and a group of students. Offered as announced by department bulletin or the Timetable. Prerequisite: Consent of the instructor.

393. SPECIAL PROBLEMS. 2 TO 4 HOURS. Special problems or reading by special arrangement with faculty. Prerequisite: Consent of the instructor.

396. SENIOR DESIGN I. 4 HOURS. Same as Bioengineering 396, Energy Engineering 396, Information Engineering 396, and Systems Engineering 396. Introduction to engineering economics, legal and social constraints on design, safety and reliability theory, and the use of simulation and optimization techniques in the engineering design process. Prerequisites: Senior standing and completion of all core requirements in the College of Engineering.

397. SENIOR DESIGN II. 4 HOURS. Same as Bioengineering 397, Energy Engineering 397, Information Engineering 397, and Systems Engineering 397. Application of principles of engineering and engineering design methodology to the solution of a large-scale design problem. May be taken in any department, regardless of area of concentration. Prerequisite: MatE 396.

Systems Engineering

Professors: Joseph H. Engel, PhD, Head of the Department; Gyan C. Agarwal, PhD; Clarence I. Carlson, BS (Emeritus); Richard M. Michaels, PhD; David C. Miller, PhD; Elliot S. Nachtman, PhD (Adjunct); William D. O'Neill, PhD; Samuel E. Shapiro, BS (Emeritus); H. Dale Walraven, MA (Emeritus).

Associate Professors: Lyndon R. Babcock, PhD; Dee M. Holladay, BS (Emeritus); Richard C. Kohler, DEd (Emeritus); Michael D. Maltz, PhD; Floyd G. Miller, PhD; Fred W. Schroeder, MS.

Assistant Professors: Deepak Bammi, PhD; Truman C. Buss, BS (Emeritus); Edward Caldario, MS; Jose Daccarett, PhD; Marion V.J. Dembski, MA; Arshad M. Khan, PhD; Allen Levin, PhD; Francis A. Mosillo, MS; Richard S. Royster, MA (Emeritus); Edward W. Walbridge, PhD.

Instructors: Robert Pancner, BS.

Lecturers: Nancy J. Conrad, MS.

Areas of Concentration

Industrial Engineering
Systems Analysis and Design
Urban and Transportation Systems

These areas of concentration are primarily associated with the Department of Systems Engineering. The department introduces every engineering student to the basic concepts of systems engineering. The student is shown how the physical characteristics of systems involving various kinds of physical objects, machines, sources of power, etc., affect and are affected by attitudes, reactions, motivations, and values of the people who interact with them. Such systems are frequently encountered in industry, government agencies, and public institutions. Specialized courses cover this material in greater depth.

Industrial Engineering—*Bachelor of Science in Engineering*

Area Advisers: Deepak Bammi, Nancy J. Conrad, Joseph H. Engel, Arshad Khan, Allen Levin, Floyd G. Miller.

Industrial engineering deals with the design, improvement, installation, operation, and maintenance of systems of men, material, and equipment. It uses the mathematical, physical, and social sciences (as combined in operations research) and engineering design to specify, predict, and evaluate the results of operating such systems. Industrial engineers function in all types of industry, in service organizations (such as airlines, banks, and hospitals), in consultant organizations, and in government agencies.

To provide the student with adequate knowledge of the economic and behavioral ingredients as well as the technology of complex man-machine systems, this area of concentration presents courses from the College of Business Administration as well as the College of Engineering. The area contains a general sequence required for all students and two specialized options (one of which will be selected by each student): industrial systems engineering and operations research. The industrial systems engineering option prepares the student to analyze industrial systems in order to help systems managers make decisions about future installations and to cope with existing problems. The operations research option shows the student how to analyze man-machine systems under real or hypothetical operating conditions to determine optimal system configurations for novel operating conditions and how to develop new methods for solving industrial system problems.

Required Courses for Both Options	*Hours*
SysE 342—Experimental Design	4
SysE 345—Modeling in Socio-Technological Systems	4
SysE 350—Stochastic Processes	4
SysE 365—Industrial Engineering Methods	4
SysE 366—Industrial Engineering Controls	4
SysE 371—Optimization Techniques I	4
Industrial Systems Engineering Option	
SysE 367—Industrial Systems Simulation	4
SysE 368—Industrial Systems Operation	4
Econ 321—Microeconomic Theory	4
Econ 322—Managerial Economics	4

Operations Research Option

SysE 315—Dynamic Systems Analysis I	4
SysE 372—Optimization Techniques II	4
SysE 373—Optimization Techniques III	4
Econ 320—Macroeconomic Theory	4

Systems Analysis and Design—*Bachelor of Science in Engineering*

Area Advisers: Gyan C. Agarwal, William D. O'Neill.

The systems analysis and design area studies the analysis and design of systems used in the service of man. Examples of systems considered arise from social, economic, physical, biological, and industrial-technological settings. The systems analysis segment of the area of concentration emphasizes analyzing empirically based, mathematically rigorous models of systems for such properties as stability, controllability, and observability in the sense of equilibria and in the input-output sense. Computer simulation laboratories are an integral part of the required courses and are an important pedagogical instrument. The design segment of the major entails questions of optimality, system performance criteria, and feedback concepts germane to system design. Students majoring in systems analysis and design can expect a thorough and rigorous education in the fundamentals of analysis and design. This experience offers the graduate a spectrum of employment or graduate educational opportunities limited only by abilities and imagination.

Required Courses	*Hours*
SysE 342—Experimental Design	4
SysE 345—Modeling in Socio-Technological Systems	4
SysE 371—Optimization Techniques I	4
SysE 315—Dynamic Systems Analysis I	4
SysE 316—Dynamic Systems Analysis II	4
SysE 341—Man-Machine Systems	4
SysE 350—Stochastic Processes	4
SysE 372—Optimization Techniques II	4
Econ 320—Macroeconomic Theory	4
InfE 312—Introduction to Communication Engineering	4
or	
InfE 360—Automatic Control Theory I	4

Urban and Transportation Systems—*Bachelor of Science in Engineering*

Area Advisers: Jose Daccarett, Edward W. Walbridge.

Students are taught the analysis, evaluation, and planning of urban transportation systems—highway and mass transit. Attention is also given to other urban systems, such as health care systems, solid waste disposal systems, and collection-distribution systems.

Urban travel behavior and the data collection techniques for determining such behavior are described. Procedures for the evaluation of alternative transportation systems (and other urban systems) are presented. The stu-

dent is introduced to state and federal urban transportation legislation and capital and operating grant procedures. The urban transportation planning process is studied in detail. Urban development models receive considerable attention. The student is introduced to the techniques of mass transit scheduling. Also covered are the topics of highway traffic flow and intersection signalization.

This area is appropriate for a student interested in a career in urban transportation planning or in public works. It is particularly recommended for students having communicative as well as mathematical skills.

Required Courses	*Hours*
SysE 342—Experimental Design	4
SysE 345—Modeling in Socio-Technological Systems	4
SysE 371—Optimization Techniques I	4
SysE 335—Urban Systems I	4
SysE 336—Urban Systems II	4
SysE 337—Urban Transportation Models	4
SysE 338—Urban Transportation Systems Planning	4
or	
EnrE 261—Environmental Systems Engineering	4
Econ 321—Microeconomic Theory	4
QM 369—Multivariate Analysis	4
QM 371—Survey Research	4

Engineering Physics—*Bachelor of Science in Engineering Science*

Area Adviser: William R. Anderson.

This area provides engineering students with a strong background in physics and concentrates on fundamental topics for those students who intend to pursue a career in physics or in one of the physics-oriented areas of engineering.

In the first two years of study, the student's course work is taken largely in the College of Engineering. During the last two years of work, a faculty adviser in the Department of Physics assists the student in preparing a cohesive program from the courses noted below. The engineering physics area of concentration is overseen by an intercollege curriculum committee that also approves a student's entrance into the area.

Required Courses	*Hours*
InfE 321—Electromagnetic Fields	4
InfE 340—Electronic Circuits	4
InfE 346—Semiconductor Electronics	4
Enre 305—Statistical Thermodynamics	4
MatE 316—Introduction to Continuum Mechanics	4
Phys 321—Quantum Mechanics I	4
Phys 322—Quantum Mechanics II	4
Phys 381—Modern Experimental Physics I	4
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One of the following:

Phys 323—Elementary Solid State Physics	4
Phys 331—Nuclear Physics	4
Phys 382—Modern Experimental Physics II	4

In addition, students may elect to take either the 8-hour design sequence (396, 397) or two courses from the following (these courses may be replaced by other engineering courses if the adviser consents):

EnrE 304—Transport Phenomena	4
EnrE 307—Kinetic Theory of Gases and Transport Phenomena	4
EnrE 341—Experimental Methods and Techniques	4
InfE 327—Modern Linear Optics	4
InfE 347—Thin Film Devices	4
MatE 311—Intermediate Dynamics	4

Courses (SysE)

150. GRAPHICAL METHODS. 2 HOURS. Principles of multiview graphical representations, pictorial graphical representations, graphical data representations, and introduction to computer graphics. Discussion and laboratory. Prerequisite: Registration in Comp 101 or consent of the instructor.

151. INTRODUCTION TO ENGINEERING DESIGN. 4 HOURS. Fundamentals of engineering design graphics. Solving short design problems and projects based on innovation and creativity. Techniques for developing alternate solutions. Communication through graphical, written, and oral technical reports. Prerequisites: SysE 150 and registration in Comp 101.

153. SYSTEMS APPROACH TO DESIGN. 4 HOURS. Practical applications of design strategies, modeling, management practices, technical reporting, and analysis techniques of design projects; the role of the professional engineer in society. Prerequisite: Comp 102.

155. PRINCIPLES OF SYSTEMS ENGINEERING I. 4 HOURS. Definitions and attributes of a system, survey of existing techniques for system modeling and decision-making, feedback and stability of systems, man-machine systems. Laboratory. Prerequisite: Concurrent registration in Math 130.

221. GRAPHICAL CALCULATIONS. 3 HOURS. Graphics in space flight. Graphical analysis and computations with analytical proofs. Graphical mathematics, including graphical calculus. Graphics of empirical equations. Graphics in communications—technical charts and monographs. Conceptual and creative design and computer-related graphics. Prerequisites: SysE 150 or the equivalent and registration in Math 133.

222. SURVEYING I. 4 HOURS. Use of instruments. Introduction to linear and angular measurements, traverses, and surveying errors. Prerequisites: College algebra and trigonometry.

223. SURVEYING II. 4 HOURS. Introduction to precise control surveys and route alignment: elements of aerial photogrammetry. Prerequisite: SysE 222.

225. PRINCIPLES OF SYSTEMS ENGINEERING II. 3 HOURS. The modeling approach to systems analysis, detailed description of a few specific modeling

techniques, general approaches to the analysis of large-scale systems. Prerequisites: SysE 155, Math 133.

260. ADVANCED TOPICS IN ENGINEERING GRAPHICS. 4 HOURS. Principles and practices of reading and drawing industrial working drawings; computer-related tasks and other graphical and computer means of solving problems, developing graphical presentations, and communicating these activities. Prerequisites: Math 195 and SysE 150 or the equivalents.

289. COOPERATIVE ENGINEERING PRACTICE. 0 HOURS. Same as Energy Engineering 289, Information Engineering 289, and Materials Engineering 289. Off-campus participation in a government or industrial training program. Prerequisite: Enrollment in the cooperative engineering program.

290. COOPERATIVE ENGINEERING SEMINAR. 1 HOUR. Same as Energy Engineering 290, Information Engineering 290, and Materials Engineering 290. Lectures and seminar for students in the cooperative engineering program. Prerequisite: SysE 289, taken during the previous term.

293. SPECIAL PROBLEMS. 2 TO 4 HOURS. May be repeated for a maximum of 8 hours. Special problems, readings, or research under close supervision of a faculty member. Prerequisite: Consent of the instructor.

302. FILE AND COMMUNICATION SYSTEMS. 4 HOURS. Same as Information Engineering 302. Functions. File system hardware and organization and structure. Analysis of file systems. Data management systems. Communication system hardware and organization and structure. Analysis of communication systems. Examples of integrated systems. Prerequisite: InfE 370.

307. PATTERN RECOGNITION I. 4 HOURS. Same as Bioengineering 307 and Information Engineering 307. The design of automated classification systems. Decision theory. Parametric and nonparametric procedures for the classification of patterned data sets. Clustering and unsupervised learning. Prerequisite: SysE 342 or Math 370.

315. DYNAMIC SYSTEMS ANALYSIS I. 4 HOURS. Mathematical modeling of systems described by ordinary differential and difference equations with application to engineering and socio-technological systems. Matrix transfer function forms for interacting systems. The Laplace and Z transform methods as applied to specific problems. Solutions for elementary topologies using computer simulations as laboratory experiments. Prerequisites: InfE 210, Math 195.

316. DYNAMIC SYSTEMS ANALYSIS II. 4 HOURS. Computer and analytical modeling of inherently or topologically nonlinear socio-technological systems. Stability analysis. Systems with transport delays. One- and two-dimensional distributed models. Laboratory simulation of particular systems. Prerequisite: SysE 315.

335. URBAN SYSTEMS I. 4 HOURS. Transportation in metropolitan areas, application of the systems approach to transportation, urban development forecast models, urban transportation forecast models, data collection procedures for determining urban travel behavior. Prerequisites: SysE 342 or Soc 201 and Math 112; Econ 321 or 120.

336. URBAN SYSTEMS II. 4 HOURS. Analysis of techniques used in urban systems engineering; emphasis on urban transportation systems and evaluation methodologies for selection of alternative urban systems designs. Prerequisites: SysE 335, 371, QM 369.

337. URBAN TRANSPORTATION MODELS. 4 HOURS. Specific models used in urban transportation studies; structuring transportation model sets, including data management needs and legal constraints. Prerequisites: SysE 335, 371, QM 369.

338. URBAN TRANSPORTATION SYSTEMS PLANNING. 4 HOURS. Evolution of transportation planning in the United States, major transportation planning studies and their methodologies, continuing planning studies, additional planning models. Term planning project. Laboratory. Prerequisites: SysE 337 and QM 371 or consent of the instructor.

340. CONSTRUCTION ENGINEERING. 4 HOURS. Same as Materials Engineering 340. Structure of the construction industry and construction projects. Review of the fundamentals and use of network-based systems, such as CPM and PERT, for the planning and control of construction projects. Methods for considering the effect of time and resource limitations on construction cost. Examples of applications taken from the construction, precast-prestressed, and mobile home industries. Prerequisite: Senior standing.

341. MAN-MACHINE SYSTEMS. 4 HOURS. Same as Bioengineering 341. Specific system areas in which the role of man in the system operation requires a systematic analysis of the human component in the system. Critical concepts, variables, and techniques involved in optimum design of human-operated systems. Laboratory experiments on man-machine interactions. Prerequisite: SysE 315.

342. EXPERIMENTAL DESIGN. 4 HOURS. Fundamental concepts of statistical analysis. Introduction to standard experimental designs and their associated application in the statistical interpretation of research data and design of engineering systems. Completely random designs, randomized block designs, Latin squares, covariance analysis and factorial experience. Prerequisites: Math 195, 220.

345. MODELING IN SOCIO-TECHNOLOGICAL SYSTEMS. 4 HOURS. Theory and practice; static and dynamic systems, continuous and discrete models, stochastic and deterministic modeling, principles of megasystems. Simulation laboratory. Prerequisites: SysE 225 and 342 or consent of the instructor.

350. STOCHASTIC PROCESSES. 4 HOURS. Description and analysis of probabilistics systems; recurrent event models, Markov processes, and queuing systems; digital computer simulation of stochastic processes in socio-technological systems; applications to specific engineering systems. Prerequisite: SysE 342.

361. PROBLEMS IN INDUSTRIAL SAFETY. 4 HOURS. Introduction; industrial safety yesterday, today, and tomorrow. Inspection and control procedures; removing the hazards from the job; human factors engineering; human behavior in industrial safety; maintaining interest in safety; accident records and injury rates; accident investigation analysis and cost. Prerequisite: Junior standing.

365. INDUSTRIAL ENGINEERING METHODS. 4 HOURS. Structure and theory of industrial organization: sales forecasting; investment analysis; plant layout and materials handling; methods analysis; work measurement systems; wage incentives and labor relations; industrial planning and policy development. Prerequisite: SysE 342 or consent of the instructor.

366. INDUSTRIAL ENGINEERING CONTROLS. 4 HOURS. Microanalysis of industrial processes; quality control; inventory theory; production planning and control; man-machine scheduling models; assembly line balancing; reliability models. Prerequisite: SysE 342 or consent of the instructor.

367. INDUSTRIAL SYSTEMS SIMULATION. 4 HOURS. The solution of industrial problems by means of computer simulation. Simulation strategies. Planning an industrial simulation experiment. In-depth study of some simulation programming languages as they apply to industrial problems and general examination of their usefulness. Major industrial simulation project. Prerequisite: SysE 342.

368. INDUSTRIAL SYSTEMS OPERATIONS. 4 HOURS. Industrial plant organization and labor administration. Industrial engineering as a staff function. Value engineering. Clerical systems analysis. Building automation systems. Industrial engineering in the service industries. Course project. Prerequisite: SysE 367.

371. OPTIMIZATION TECHNIQUES I. 4 HOURS. Linear programming models, simplex method, sensitivity analysis, transportation problems, duality. Nonlinear programming models, separable objective function, geometric programming, Kuhn-Tucker equations, quadratic programming. Prerequisites: Math 195, 220.

372. OPTIMIZATION TECHNIQUES II. 4 HOURS. Dynamic programming. Optimal control theory; Bellman, Hamilton-Jacobi, and Euler-Lagrange equations; Pontryagin's maximum principle. Applications of optimization techniques to socio-technological models and engineering systems. Simulation laboratory using examples of actual systems. Prerequisites: Math 195, 220.

373. OPTIMIZATION TECHNIQUES III. 4 HOURS. Determination of optimum strategies to solve probabilistic engineering problems. Use of random experiments to improve engineering decisions. Solution of multistage decision problems. Game theory. Prerequisite: SysE 342.

378. COMPUTER GRAPHICS I. 4 HOURS. Same as Information Engineering 378. Principles of interactive computer graphics. Discussion of display devices, display files, and interactive graphical techniques. Treatment of graphical structures in two dimensions. Prerequisites: SysE 150, InfE 270.

391. SEMINAR. 1 TO 4 HOURS. May be repeated. Topics to be arranged. Prerequisite: Consent of the instructor.

393. SPECIAL PROBLEMS. 2 TO 4 HOURS. Special problems or reading by arrangement with the faculty. Prerequisite: Consent of the instructor.

396. SENIOR DESIGN I. 4 HOURS. Same as Bioengineering 396, Energy Engineering 396, Information Engineering 396, and Materials Engineering 396. Introduction to engineering economics, legal and social constraints on design, safety and reliability theory, and the use of simulation and optimization techniques in the engineering design process. Prerequisites: Senior standing and completion of all core requirements in the College of Engineering.

397. SENIOR DESIGN II. 4 HOURS. Same as Bioengineering 397, Energy Engineering 397, Information Engineering 397, and Materials Engineering 397. Application of principles of engineering and engineering design methodology to the solution of a large-scale design problem. May be taken in any department, regardless of area of concentration. Prerequisite: SysE 396.

College of Health, Physical Education, and Recreation

Sheldon L. Fordham, EdD, Dean
Charles J. Kristufek, MS, Associate Dean
Leo L. Gedvilas, MS, Assistant Dean
Walter G. Versen, MEd, Assistant Dean

The College of Health, Physical Education, and Recreation consists of three units: the Department of Physical Education, the Division of University and Community Recreation, and the Division of Intercollegiate Athletics.

The Department of Physical Education offers a baccalaureate professional program with three optional tracks, a certified program in corrective therapy, a coaching minor for non-physical education majors, a general education program, and graduate courses. Programs to meet the recreational needs of people living in the area as well as intramural sport and recreation programs for students, faculty, and staff are provided by the Division of University and Community Recreation. The Division of Intercollegiate Athletics, which includes sport and dance clubs as well as men's and women's varsity athletic teams, provides intercollegiate competition on local, regional, and national levels.

Department of Physical Education

Professors: Helen M. Heitmann, DPE, Head of the Department; Helen M. Barton, EdD (Emeritus); Peter R. Berrafato, MS; Sheldon L. Fordham, EdD; Dorothy F. Gillanders, EdD; John O. Jones, MS (Emeritus); Charles J. Kristufek, MS.

Associate Professors: Leo L. Gedvilas, MS; Talmadge G. Hiebert, PhD, MD (Visiting); Marian E. Kneer, PhD; Lester H. Miller, MA; Benedict W. Montcalm, MA; Lawrence B. Oscai, PhD; Wilma J. Pesavento, PhD; William H. Roetzheim, MS; Frances E. Sweeney, MA; Walter G. Versen, MEd.

Assistant Professors: Robert J. Beck, MEd; John W. Brown, MS; James C. Descourouez, MEd; William J. Leach, MS; Carol Ann Leaf, PhD; Harold H. Nemoto, MA; Thomas F. Russo, MEd; Thomas P. Sattler, EdD; Donald G. Scherrer, PhD; Philip H. Van Slooten, PED.

Instructors: Karen Beck, MS; Elizabeth Brown, MS; Robert W. Danner, MS; Samuel Donnelly, Jr., MA; Mary Kapsalis, MS; Anne K. Klinger, MA; Concetta M. Licausi, MA; Michael B. McGovern, MS; Ralph W. Mackh, MEd; James A. Nasiopulos, MS; Anna Neumann, MS; Nina K. Pappas, MS.

Lecturers: Herbert April, BA (Visiting); William Carroll, MS; James R. Darrah, BS; Suzanne Hofer, BS (Visiting); Clarence Johnson, BS; Clinton Lewis, Jr., BS; Edward J. McQuillan, BS; Edward W. Millhouse, Jr., PhD (Visiting); Margaret Ocokoljich, MA; Barbara Pulliam, MS; Charlotte Remenyik, BA; Linda Voss, BS; Marianne Wakerlin, MS; Mary Kay Walsh, BS.

Professional Program

The professional program is designed to prepare the student for the physical education profession. It includes a core curriculum and three optional tracks.

Every student majoring in physical education is required to complete the 66-hour core curriculum during the first two years. During the second year, the student, with the aid of an adviser, selects one of three professional tracks. The student seeking state certification to teach physical education in grades kindergarten through 12 should complete Option I; the student seeking state certification for high school teaching should complete Option II; and the student interested in a non-teaching area should select Option III.

Option I is designed to meet the professional needs of the student who is primarily interested in teaching physical education and also in coaching. *Option II* is designed for the student whose primary interest is teaching physical education, coaching, and, possibly, teaching a subject other than physical education. *Option III* is designed to meet the needs and interests of the student who desires to go into the field of exercise therapy, dance, or recreation (private or public) or who desires to prepare for a career in research in such areas as exercise physiology, kinesiology, motor learning, sociology of sport, psychology of sport, or another related field. Each option includes electives in required areas and free elective courses. The student may use the physical education elective hours and the free elective hours to become a teaching generalist or may concentrate on one area of interest and become a teaching specialist. The general education electives and free electives may be used to gain a wide range of experience or these hours may be applied toward a minor outside the field of physical education.

Freshmen who wish to enter the professional curriculum must meet the entrance requirements of the College of Health, Physical Education, and Recreation. Students who transfer from another institution or from another college of the University must meet the following grade point requirements: students with fewer than 90 quarter hours of credit—3.30 (A=5.00) cumulative average or higher; students with 90 quarter hours of credit or more—3.50 cumulative average or higher.

The Bachelor of Science in Physical Education is awarded upon the completion of 186 or 194 hours of credit, including 66 hours in the core pro-

gram, the total number of hours depending upon the option selected. In addition, all of the general University requirements for graduation must be met. See *General University Requirements.*

Core Program. Required of all physical education majors.

General Education	39 hours
English Composition 101, 102	
Biological Sciences 133, 134	
Speech 100, 101	
Sociology 100	
Psychology 100	
Philosophy 101	
Humanities elective, 4 hours	
Physical Education	27 hours
PE 150, 151, 152, 153, 154, 251, 252, 253, 254	

Options.

In addition to the core, the student must complete the requirements of one of the following options:

Option I, K-12 Certification

General Education	32 hours
History 151	
Political Science 151	
Education 205 or 201—Health science courses	
Electives, 20 hours	
Education	28 hours
170, 210, 230, 270, 271	
Physical Education	52 hours
275, 276, 277, 278, 279, 235, 281	
8 hours for men, 6 hours for women selected from: 171, 172, 173, 174, 175, 177	
8 hours for men and women from the following:	
Men—156, 161, 162, 164, 230, 231	
Women—155, 156, 157, 158, 159, 160, 161, 162, 230, 231	
For women, 4 hours from: 190, 191, 192, 193, 194	
14 hours for men, 12 hours for women selected from: 155 through 234	
Electives in physical education or another field	8 hours
Total hours for graduation (Core plus Option I)	186

Option II, Secondary School Certification

General Education	46 hours
History 151	
Political Science 151	
Education 205—Health science course	

Electives, 34 hours (It is recommended these hours be used in meeting requirements for a teaching minor.)	
Education	28 hours
Education 170, 210, 230, 270, 271	
Physical Education	48 hours
277, 278, 279, 281, 282	
8 hours for men, 6 hours for women selected from: 171, 172, 173, 174, 175, 177	
8 hours for men and women from the following: Men—156, 161, 162, 164, 230, 231 Women—155, 156, 157, 158, 159, 160, 161, 162, 230, 231	
For women, 4 hours from: 190, 191, 192, 193, 194	
14 hours for men, 12 hours for women selected from: 155 through 234	
Electives in physical education or another field	6 hours
Total hours for graduation (Core plus Option II)	194

Option III, Non-Certification

Selected with the consent of the adviser, this option is for the student with interest in such areas as exercise physiology, kinesiology, motor learning, and the sociology or psychology of sport, dance, recreation, or exercise therapy.	
Total hours required for graduation (Core plus Option III)	186

Kinesiotherapy Program. The physical education major who desires to become a candidate for Certification in Corrective Therapy is required to complete satisfactorily the courses listed below, the requirements of the core program, and one of the optional programs.

Physical Education 261, 263, 264, 270, 275, 279, 287, and 308	41 hours
Psychology 101, 143, 210, 256, 280	20 hours
Total hours	61

Coaching Minor. This minor is available to students who are not physical education majors. Course requirements are:

Physical Education 150, 253, 254, 277, 282, 285	
8 hours selected from Physical Education 155-234	
Total hours	30

General Education Program

This program is designed for non-physical education majors who want to develop skills and knowledge in sport, dance, or athletic activities and/or to develop physical fitness as well as basic concepts of the physiology of exercise. Courses with a PE prefix numbered below 150 are general education courses.

Students who do not major in physical education ordinarily select courses from the general education program but may take courses designed for physical education majors (courses numbered PE 150 and above).

Physical Education Requirements

Students in the teacher education program in all colleges must present 4½ hours of physical education or health science for teacher certification in Illinois.

Honors

Dean's List

Students who earn at least a 4.00 grade point average for 12 quarter hours of work or more (exclusive of basic military science courses and PE courses below PE 149) during a term have their names posted on the Dean's List.

Graduation with Honors

College Honors. A minimum grade point average of 4.00 for *all* work completed and counted toward the degree.

Departmental Honors. To meet the requirements for candidacy, a student must (1) receive college honors; (2) be a physical education major; and (3) meet one of the following criteria:

Distinction

Students in Options I and II:

A minimum grade point average of 4.25 in *all* physical education courses counted toward the degree and completed at UICC (at least 50 hours) plus student teaching.

Students in Option III:

A minimum grade point average of 4.25 in *all* physical education courses counted toward the degree (at least 66 hours) and completed at UICC.

High Distinction

Students in Options I and II:

A minimum grade point average of 4.50 in all physical education courses counted toward the degree and completed at UICC (at least 50 hours) plus student teaching and, in addition, the completion of PE 298 with a grade of at least B.

Students in Option III:

A minimum grade point average of 4.50 in *all* physical education courses (at least 66 hours) completed at UICC and counted toward the degree and, in addition, the completion of PE 298 with a grade of at least B.

Highest Distinction
Students in Options I and II:

A minimum grade point average of 4.75 in *all* physical education courses counted toward the degree and completed at UICC (at least 50 hours) plus student teaching and, in addition, the completion of PE 298 with an A.

Students in Option III:

A minimum grade point average of 4.75 in *all* physical education courses (at least 66 hours) completed at UICC and counted toward the degree and, in addition, the completion of PE 298 with at least an A.

Division of University and Community Recreation

Director: Peter R. Berrafato
Intramural Sports Director: James A. Nasiopulos
Recreation Director: Thomas F. Russo
Community Program Coordinator: Elizabeth W. Brown

Sports Clubs
Aquiana (synchronized swimming): Frances Sweeney, sponsor
Circle Dancers: Margaret Ocokoljich, sponsor
Fencing: Charlotte Remenyik, sponsor
Handball: Donald Scherrer, sponsor
Sailing: Robert Aitken, sponsor
Bowling: James Nasiopulos

The Division of University and Community Recreation has four major areas of activity: University intramurals, recreation, the sport club program, and the community recreation program.

The intramural program encompasses formal structured competition in twelve activities including basketball, bowling, handball, racquetball, and volleyball. Students, staff, and faculty may participate in most of these activities.

The University recreation program provides the opportunity for informal participation in a variety of activities. Space and equipment may be reserved for recreational activities for student, staff, and faculty groups of six or more persons.

The sport club program currently provides scheduled competition and/or recreational activity in sailing, bowling, squash racquets, fencing, and handball. The Circle Dancers perform in exhibitions, demonstrations and other events. The synchronized swim club, Aquiana, participates in exhibitions and competitive meets.

The community recreation program provides opportunities for the University neighborhood residents to participate in many recreational and physical education activities including swimming, basketball, volleyball, dance, softball, and racquetball.

Division of Intercollegiate Athletics

Director of Athletics: William H. Roetzheim
Associate Director of Athletics: Mary Kapsalis
Sports Information Director: Michael Needleman
Baseball: Lester H. Miller (Head); James R. Darrah
Basketball (Men): Edward J. McQuillan (Head); Clinton Lewis
Basketball (Women): Mary Kay Walsh
Cross Country, Track and Field (Men): William F. Leach (Head); Lee Slick
Cross Country, Track and Field (Women): Linda Voss
Gymnastics (Men): Clarence F. Johnson (Head); Arnold Gentile
Gymnastics (Women): Marianne Wakerlin (Head); Patrick Boy
Ice Hockey: John A. Kantarski
Soccer: Samuel Donnelly (Head); James R. Darrah
Softball: Mary Kay Walsh
Swimming and Diving: Ralph W. Mackh (Head); Robert W. Danner
Swimming (Women): Linda Voss
Volleyball: Mary Kapsalis (Head); Mary Kay Walsh
Water Polo: Robert W. Danner

A program of intercollegiate athletics is provided for both men and women. During the 1975-76 year the athletic program included nine varsity sports for men and seven for women. The men's teams participate in the NCAA Division II Championships.

Courses (PE)

100. SLIMNASTICS. 2 HOURS. A program designed to slim the figure through exercise. Discussions of problems relating to weight control.

101. DEVELOPMENTAL ACTIVITIES. 1 HOUR. Development and maintenance of physical fitness. Analysis of the effects and methods of exercise.

102. PERSONAL DEFENSE. 2 HOURS. Self-defense techniques, including methods of preventing attacks. Introduction to individual techniques of breakfalls and basic throws. Emphasis on prevention rather than mat work.

104. RELAXATION. 2 HOURS. Edmund Jacobson's neuromuscular techniques of tension release.

105. BEGINNING YOGA. 1 HOUR. A progressive program of weight control and slimming and firming exercises.

106. TRAMPOLINE AND APPARATUS. 2 HOURS. Basic and intermediate skills on horse, buck, parallel bars, balance beam, and trampoline.

110. BEGINNING SWIMMING. 1 HOUR. For students who are afraid of the water or cannot swim one length of the pool. Floating, front crawl, back crawl, side stroke, elementary back stroke, and plain front dive.

111. INTERMEDIATE SWIMMING. 1 HOUR. Front crawl, back crawl, side stroke, elementary back stroke, breast stroke, inverted breast stroke, diving, and surface diving. Prerequisite: Ability to swim one pool length.

112. ADVANCED SWIMMING. 1 HOUR. All basic swimming strokes, the butterfly, and spring board diving. Some racing techniques and synchronized swimming. Prerequisite: Ability to swim the front crawl, back crawl, elementary back stroke, breast stroke, and side stroke each for a distance of 25 yards.

113. LIFESAVING. 2 HOURS. For students who wish to learn lifesaving skills. The American Red Cross Life Saving Certificate is awarded upon successful completion of the course. Prerequisite: Ability to swim 100 meters using three of the following strokes: back, breast, crawl, and side.

114. SYNCHRONIZED SWIMMING. 1 HOUR. Practice and presentation of strokes, stunts, sculling, and composition. Prerequisite: Intermediate swimming ability.

115. BALLET. 2 HOURS. Introduction to classical ballet; basic techniques and terminology, appreciation, and historical development.

119. ADVANCED SYNCHRONIZED SWIMMING. 1 HOUR. Practice and presentation of strokes and advanced skills; emphasis on creativity. Prerequisite: PE 114.

120. ARCHERY. 2 HOURS. Skills, mechanical principles, tournament scoring.

121. BEGINNING BADMINTON. 2 HOURS. Development of skills of clears, serves, smashes, and drop shots; rules of the game.

123. BEGINNING BOWLING. 2 HOURS. Basic skills and knowledge for students with little or no experience.

124. ADVANCED BOWLING. 2 HOURS. Advanced skills, knowledge, progression, and analysis of bowling. Prerequisite: PE 123 or a bowling average of 120 for women, 140 for men.

125. BEGINNING GOLF. 1 HOUR. Historical development, values, rules, etiquette, and skill techniques. Use of woods, irons, and putters.

127. HANDBALL. 1 HOUR. Skills, knowledge, attitudes, and conditions.

130. BEGINNING TENNIS. 1 HOUR. Basic skills and understandings of the game for students with little or no experience.

131. ADVANCED TENNIS. 1 HOUR. Advanced skills. Emphasis on singles and doubles strategy.

139. FUNDAMENTALS OF CANOEING. 2 HOURS. Introduction to equipment, skills, and basic techniques. Prerequisite: Ability to swim 50 meters or consent of the instructor.

142. FUNDAMENTALS OF SNOW SKIING. 2 HOURS. For students of varying abilities. Emphasis on safety. Equipment may be rented or furnished by the student. A fee is required.

144. BEGINNING BASKETBALL. 2 HOURS. Basic skills, knowledge, and mechanical principles.

145. BEGINNING SOFTBALL. 2 HOURS. Basic skills, knowledge, and mechanical principles.

146. BEGINNING VOLLEYBALL. 2 HOURS. Basic skills and understandings of the game for students with limited experience.

147. ADVANCED VOLLEYBALL. 1 HOUR. Advanced techniques and team play. Prerequisite: PE 146 or consent of the instructor.

150. INTRODUCTION TO PHYSICAL EDUCATION. 2 HOURS. For physical education majors. Historical highlights, the role of physical education in modern society, basic philosophical and scientific principles of the profession. Professional organizations, literature, and career opportunities.

151. PHYSIOLOGY OF EXERCISE PRACTICUM. 2 HOURS. Laboratory experience in applied physiology; cardiovascular endurance, muscle coordination, general motor fitness. Prerequisite: Concurrent registration in PE 254.

152. AQUATICS. 2 HOURS. Experience and evaluation of the basic principles of motion and endurance in the water. Prerequisites: PE 110 or the ability to swim 50 yards; credit or concurrent registration in PE 253.

153. GYMNASTICS. 2 HOURS. Utilization of gymnastic apparatus to illustrate the application of kinesiological principles. Prerequisite: Credit or concurrent registration in PE 253.

154. RHYTHMS, DANCE, AND FREE EXERCISE. 2 HOURS. Introduction to the basic skills, concepts, and esthetic qualities of rhythmic activities. Prerequisite: Credit or concurrent registration in PE 253.

155. FUNDAMENTALS OF ARCHERY. 1 HOUR. Skills, progression, and analysis.

156. FUNDAMENTALS OF BADMINTON. 2 HOURS. Skills, progression, and analysis.

157. FUNDAMENTALS OF BOWLING. 1 HOUR. Skills, progression, and analysis.

58. FUNDAMENTALS OF FENCING. 2 HOURS. Skills, progression, and analysis of nonelectric foil fencing.

159. FUNDAMENTALS OF GOLF. 2 HOURS. Skills, progression, and analysis.

160. FUNDAMENTALS OF HANDBALL. 2 HOURS. Skills, progression, and analysis.

161. FUNDAMENTALS OF TENNIS. 2 HOURS. Skills, progression, and analysis.

162. FUNDAMENTALS OF TRACK AND FIELD. 2 HOURS. Skills, progression, and analysis.

163. FUNDAMENTALS OF WEIGHT TRAINING. 2 HOURS. Skills, progression, and analysis.

164. FUNDAMENTALS OF WRESTLING. 2 HOURS. Skills, progression, and analysis.

165. FUNDAMENTALS OF RACKETBALL AND SQUASH. 2 HOURS. Skills, progression, and analysis.

170. FUNDAMENTALS OF BASEBALL. 4 HOURS. Skills, rules, and tactics; movement analysis; practice methods.

171. FUNDAMENTALS OF BASKETBALL. 2 HOURS. Skills, progression, and analysis.

172. FUNDAMENTALS OF FIELD HOCKEY. 2 HOURS. Skills, progression, and analysis.

173. FUNDAMENTALS OF NONTACKLE FOOTBALL AND FLICKERBALL. 2 HOURS. Skills, progression, and analysis.

174. FUNDAMENTALS OF SOCCER AND SPEEDBALL. 2 HOURS. Skills, progression, and analysis.

175. FUNDAMENTALS OF SOFTBALL. 2 HOURS. Skills, progression, and analysis.

176. FUNDAMENTALS OF TACKLE FOOTBALL. 4 HOURS. Skills, rules, and tactics; movement analysis; practice methods.

177. FUNDAMENTALS OF VOLLEYBALL. 2 HOURS. Skills, progression, and analysis.

181. FUNDAMENTALS OF COMPETITIVE SWIMMING. 2 HOURS. Skills, progression, and analysis. Prerequisite: Ability to swim 100 yards.

182. FUNDAMENTALS OF WATER POLO. 2 HOURS. Skills, progression, and analysis. Prerequisite: Ability to swim 100 yards.

183. FUNDAMENTALS OF SYNCHRONIZED SWIMMING. 2 HOURS. Skills, progression, and analysis. Prerequisite: Intermediate swimming ability.

184. FUNDAMENTALS OF DIVING. 2 HOURS. Skills, progression, and analysis. Prerequisite: Ability to execute a plain front dive.

190. FUNDAMENTALS OF BALLROOM DANCE. 2 HOURS. Introduction to ballroom dance: skills, rhythmic analysis, word cues, and history.

191. FUNDAMENTALS OF FOLK AND SQUARE DANCE. 2 HOURS. Skills and techniques of fundamental dance steps; rhythm analysis; cultural history. Emphasis on skill development.

192. FUNDAMENTALS OF JAZZ DANCE. 2 HOURS. Basic techniques and styles of modern jazz; choreographic principles and historical development.

193. FUNDAMENTALS OF MODERN DANCE. 2 HOURS. Introduction to dance as a performing art, the development of basic modern dance techniques, improvisation, compositional forms.

194. FUNDAMENTALS OF RHYTHMIC GYMNASTICS. 2 HOURS. May be repeated for credit with approval of the department. Theory of European gymnastic systems. Applications of techniques of rhythmic gymnastics with light hand apparatus. Emphasis on systems studied varies. Prerequisite: PE 154.

196. PRODUCTION I: STAGING THE DANCE. 2 HOURS. Introduction to technical principles of dance and mechanical preparations of the theater for the

stage performance, including the use of the human form, lighting, props, and costumes for stage effects. Field experience is required. Prerequisite: PE 115, 192, or 193 or consent of the instructor.

197. PRODUCTION II: PRODUCTION MANAGEMENT. 2 HOURS. The organization and administration of a dance group and dance productions. Field experience is required. Prerequisite: PE 196 or consent of the instructor.

198. DANCE FOR CHILDREN. 3 HOURS. The development of rhythmic patterns in children, evaluation and lesson planning in elementary school dance, presentation of materials, uses of accompaniment and types of percussion instruments suitable for children. Prerequisite: PE 154.

199. GAMES FOR CHILDREN. 1 OR 2 HOURS. Supervised experience in selecting, planning, and conducting games in an instructional setting. Prerequisite: Credit or concurrent registration in PE 266, 276, or 280.

200. ADVANCED FENCING. 2 HOURS. Advanced skills, strategy, officiating, and teaching techniques for saber, the electric foil, and epee. Prerequisite: PE 158.

201. ADVANCED GOLF. 2 HOURS. Advanced skills, strategy, officiating and teaching techniques, and skill progression. Prerequisite: PE 159.

202. ADVANCED GYMNASTICS. 2 HOURS. Advanced skills, strategy, officiating and teaching techniques, and skill progression. Prerequisite: PE 153 or consent of the instructor.

203. ADVANCED TENNIS. 2 HOURS. Advanced skills, officiating and teaching techniques, and strategies; emphasis on match play. Prerequisite: PE 161.

204. ADVANCED TRACK AND FIELD. 4 HOURS. Advanced development of track, field, and cross country skills. Prerequisites: PE 162, 235, 254.

205. ADVANCED WRESTLING. 2 HOURS. Advanced skills, strategy, officiating and teaching techniques, and skill progression. Prerequisite: PE 164.

210. ADVANCED BASEBALL. 2 HOURS. Baseball strategy for high school and college coaching. Playing rules are discussed, interpreted, and tested in preparation for the baseball umpires qualification examination. Prerequisite: PE 170.

211. ADVANCED BASKETBALL. 4 HOURS. Advanced skills, strategy, officiating and teaching techniques, and skill progression. Prerequisite: PE 171.

212. ADVANCED FIELD HOCKEY. 2 HOURS. Advanced skills, strategy, officiating and teaching techniques, and skill progression. Prerequisite: PE 172.

213. ADVANCED SOCCER. 2 HOURS. In-depth treatment of advanced skills, strategies, officiating and teaching techniques, and skill progression. Prerequisite: PE 174.

214. ADVANCED SOFTBALL. 2 HOURS. Advanced skills, officiating and teaching techniques, and skill progression. Prerequisite: PE 175.

215. ADVANCED TACKLE FOOTBALL. 2 HOURS. For students specializing in coaching football. Organization of a football program. Advanced concepts of offense, defense, and the kicking game. Prerequisite: PE 176.

216. ADVANCED VOLLEYBALL. 2 HOURS. Advanced skills, strategy, officiating and teaching techniques, and skill progression. Prerequisite: PE 177.

217. ADVANCED HANDBALL. 2 HOURS. Advanced techniques and strategy for playing singles, doubles, and cutthroat games. Prerequisite: PE 127 or 160 or consent of the instructor.

218. ADVANCED MODERN DANCE. 2 HOURS. Advanced techniques and compositional forms; instructional techniques. Emphasis on individual and group choreography and performance. Prerequisite: PE 193 or consent of the instructor.

220. KARATE. 2 HOURS. Introduction and overview of the historical, philosophical, and physical aspects of Oriental self-defense methods; karate, kung-fu, taekwondo.

221. PRACTICUM IN COMPETITIVE ACTIVITY. 2 HOURS. May be repeated up to a total of 8 hours of credit. Advanced skill techniques and strategy in a competitive setting. Prerequisite: Consent of the instructor.

225. ADVANCED KARATE. 2 HOURS. Advanced theories, concepts, and technical skills of Oriental self-defense methods; karate, kung-fu, and taekwondo. Prerequisite: PE 220 or consent of the instructor.

230. INSTRUCTIONAL TECHNIQUES IN GYMNASTICS. 2 HOURS. Development of the teaching skills required to coach or instruct students in gymnastics. Prerequisite: PE 153.

231. INSTRUCTIONAL TECHNIQUES IN SWIMMING. 2 HOURS. Organization, skills, and instructional techniques. Prerequisite: PE 152.

232. SCUBA DIVING. 2 HOURS. Advanced skin diving techniques; fundamental scuba diving skills and scuba lifesaving; environmental, medical, and other scientific relationships to diving. American Heart Association Rescue Certification (CPR) and other additional first aid in relation to marine wounds and emergency procedures. Prerequisite: Ability to swim 200 yards.

234. OFFICIATING WOMEN'S SPORTS. 2 HOURS. May be repeated for a total of 4 hours of credit. Skills and techniques. Satisfactory completion of this course qualifies students for the Division of Girls' and Women's Sports rating. Sports are consistent with the season the course is offered in.

235. PRACTICUM IN PHYSICAL EDUCATION LEADERSHIP. 2 HOURS. Field experiences and lectures to facilitate the understanding of the educative process of youth through physical activity. Class management experience is provided. Prerequisite: PE 150.

236. OPEN WATER SCUBA. 4 HOURS. Ten categories of scuba dives in various open water environments. Emphasis on environmental and diving awareness, equipment familiarization, buoyancy control, and navigation. Basic course training dives. Multicertified. A fee is required. Prerequisite: PE 232.

237. ADVANCED SCUBA. 2 HOURS. Introduction to specific diving activities, such as underwater navigation and search and recovery techniques, leading to multicertified scuba ratings. Prerequisite: PE 232 or certified diver.

240. INTRODUCTION TO RECREATION. 3 HOURS. Analysis of the structure and function of the recreation of man; its philosophy, concepts, and trends. Institutionalized recreation leadership, activities, and programs.

241. OUTDOOR RECREATION. 4 HOURS. Philosophy and principles underlying the methods and programs in outdoor recreation activities and events; special emphasis on outdoor education and enriching the leisure-time program.

242. CAMP COUNSELING. 4 HOURS. The history and development of organized camping; camp administrative organization; analysis of program content and development; the nature and scope of counseling in relation to common camp behavior problems.

243. RECREATION PROGRAMS. 4 HOURS. Organization and conduct of recreation programs; importance of planning based on community needs, resources, and urban environment; techniques required for the promotion of balanced and comprehensive programs. Prerequisite: PE 240.

244. LEADERSHIP IN RECREATION. 4 HOURS. The nature of leadership; its new dimensions and group interpersonal relationships in the recreation setting. Prerequisite: PE 240.

245. CREATIVE LEISURE CRAFTS. 2 HOURS. Creative craft activities and projects suitable for playgrounds, recreation centers, and camps; emphasis on methods and techniques in the use of a variety of materials, programs, and class organizations.

246. PLAYGROUND MANAGEMENT. 3 HOURS. The organization and management of playgrounds and community centers; focus on the planning and administering of playground activities, budgeting special events, and community involvement. Prerequisite: PE 243.

247. OUTDOOR EDUCATION. 4 HOURS. Philosophy of outdoor education. Implementation of programs in schools and public, private, and professional agencies; emphasis on ecology awareness and natural environment. Prerequisite: Junior standing.

248. SUPERVISED FIELD CAMPING. 5 HOURS. Practical supervised experience in the planning and conduct of camp programs and activities. Students are actively involved in the application of camping theory and techniques, utilizing suburban and city camp settings. Prerequisite: PE 242.

249. CANOE CAMPING. 4 HOURS. A ten-day wilderness experience in the Boundary Water Canoe Area of the United States and Canada. Emphasis on canoeing, wilderness survival, equipment selection, and ecology. A fee is required. Prerequisite: Ability to swim 50 meters or consent of the instructor.

250. SOCIAL RECREATION. 3 HOURS. Leadership skills for conducting social recreation programs for a variety of settings and age groups.

251. EVALUATION IN PHYSICAL EDUCATION. 4 HOURS. Laboratory experience in evaluation techniques for assessing skill, knowledge, attitude, motor achievement, and physical fitness status. Elementary techniques of test construction, statistical methods, and research procedures.

252. HISTORY AND PHILOSOPHY OF PHYSICAL EDUCATION. 4 HOURS. Development from primitive to contemporary societies. Assumptions, trends, and leaders.

253. KINESIOLOGY. 5 HOURS. Biochemical analysis of human performance and its application to various sports and rhythmic and aquatic activities. Prerequisite: BioS 133.

254. PHYSIOLOGY OF EXERCISE. 4 HOURS. The physiological mechanisms associated with physical exercise. Prerequisite: BioS 134.

260. MOTOR LEARNING. 4 HOURS. The application of learning theory and research to the acquisition of motor skills. Prerequisite: Psch 100.

261. PERCEPTUAL-MOTOR DEVELOPMENT. 4 HOURS. Theories. Interpretation of research relating to human processing of sensory information and its relation to the development of motor patterns and skills. Applications to physical education instruction. Prerequisite: PE 253.

262. PROBLEMS IN PHYSICAL EDUCATION. 4 HOURS. Intensive reading and research on current problems in the field. Prerequisite: Junior or senior standing.

263. THERAPEUTIC ACTIVITIES. 4 HOURS. Recreational activities and therapeutic exercises for handicapped individuals. Organizing and administering recreational and exercise therapy.

264. PRINCIPLES AND PRACTICES OF EXERCISE THERAPY. 4 HOURS. Advanced study of all the scientific areas applying to the principles and practices of physical restoration. Prerequisites: PE 253, 263.

266. MOVEMENT IN EARLY CHILDHOOD EDUCATION. 4 HOURS. The role of movement in the young child's cognitive, affective, and perceptual motor development; emphasis on structuring conducive environments and facilitating positive movement experiences.

269. HISTORY OF SPORTS. 4 HOURS. Sports of the Western world from ancient civilizations to modern times.

270. EDUCATIONAL PRACTICE WITH SEMINAR I. 8 HOURS. Same as Education 270. The first half of a two-segment sequence of practice teaching, including seminar, to meet certification requirements for teaching in the elementary or secondary school. Prerequisites: Ed 250, admission to advanced standing, and recommendation of the department of specialization.

271. EDUCATIONAL PRACTICE WITH SEMINAR II. 8 HOURS. Same as Education 271. The second half of a two-segment sequence of practice teaching, including seminar, to meet certification requirements for teaching in the elementary or secondary school. Prerequisites: Ed 250, credit or concurrent registration in PE 270, admission to or continuation of advanced standing, and recommendation of the department of specialization.

273. CLINICAL INTERNSHIP IN CORRECTIVE THERAPY. 15 HOURS. Training experience to increase clinical skills in recognition, differences, and applications of corrective therapy modalities. Ward and clinic experience in selected hospitals of the city. Prerequisites: PE 253, 263, 264.

275. ADAPTED PHYSICAL EDUCATION. 2 HOURS. A study of handicaps found among students. Adaptation of exercises and activities to accommodate individual needs. Prerequisites: BioS 133, PE 253.

276. ELEMENTARY SCHOOL PHYSICAL EDUCATION PROGRAMS AND ACTIVITIES. 4 HOURS. Program activities compatible with the developmental characteristics of elementary school children and with the educational objectives of the elementary school.

277. FIRST AID AND ATHLETIC TRAINING. 4 HOURS. American Red Cross first aid. Diagnostic procedures for athletic injuries; treatment. Prerequisite: BioS 134.

278. INSTRUCTIONAL TECHNIQUES IN PHYSICAL EDUCATION. 4 HOURS. Application of affective, cognitive, and psychomotor principles in physical education class management, unit and lesson planning, and instructional techniques. Fundamental skills, knowledge, and practice of physical conditioning. Prerequisite: PE 235 or consent of the instructor.

279. ORGANIZATION AND CURRICULUM DEVELOPMENT IN PHYSICAL EDUCATION. 4 HOURS. Curriculum planning and evaluation processes based on growth and developmental factors to accommodate individual needs; organization of physical education programs, facility usage, budget and staffing patterns. Prerequisite: PE 150 or consent of the instructor.

280. ELEMENTARY SCHOOL PHYSICAL EDUCATION ACTIVITIES. 4 HOURS. For elementary education majors. Methods and materials for games, self-testing, and rhythmic activities applicable to all elementary grades. Prerequisite: Junior standing.

281. SUPERVISED TEACHING OF PHYSICAL EDUCATION. 2 HOURS. Laboratory experience teaching in the general education physical education classes under the direct supervision of the staff; managing, planning, and instructing. Assignment of classes by arrangement. Prerequisite: PE 278.

282. STUDENT COACHING. 2 TO 4 HOURS. Men must enroll for 4 hours of credit. Coincides with student teaching. Preparation for, and supervised experience in, coaching. Prerequisite: Concurrent registration in Ed 270, 271.

285. ORGANIZATION AND ADMINISTRATION OF ATHLETICS. 3 HOURS. The organization and administration of interscholastic athletic competition. Prerequisites: Junior standing and PE 150.

286. ORGANIZATION AND ADMINISTRATION OF INTRAMURAL SPORTS PROGRAMS. 4 HOURS. Background and development. Principles of program building, scheduling, and supervision of activities; relationship to other school programs. Prerequisite: PE 150.

287. ORGANIZATION OF SCHOOL HEALTH PROGRAMS. 4 HOURS. The development of school health programs, the function and use of health sciences, healthful school living, the problems and needs of school children. Individual projects are required.

290. SPECIAL POPULATION PROGRAMS IN RECREATION. 3 HOURS. Recreation programs for the handicapped, aged, and preschool children.

291 ADMINISTRATION OF URBAN LEISURE. 4 HOURS. The administration of leisure programs in public, private, voluntary, and commercial organizations. Prerequisites: PE 244 and consent of the instructor.

298. HONORS SEMINAR. 4 HOURS. Current topics and issues in physical education. Prerequisites: Junior standing and a cumulative 4.00 average.

300. ADMINISTRATIVE THEORY AND PRACTICE IN PHYSICAL EDUCATION. 4 HOURS. A theoretical approach to the development of administrative thought as it relates to physical education; emphasis on the understanding of concepts and models from the social sciences and their implications for leadership in the educational setting; development of a personal philosophy of administration. Prerequisite: PE 279.

311. INSTRUCTIONAL TECHNIQUES IN PHYSICAL EDUCATION. 4 HOURS. Theory and practice; special emphasis on the application of motor learning research to instructional techniques and teaching styles. Prerequisites: Senior standing and consent of the instructor.

312. PSYCHOLOGY AND PHYSICAL ACTIVITY. 4 HOURS. The study and application of psychological concepts concerning perceptual-motor development, emotions, motivation, motor learning, and group dynamics in the physical education process. Prerequisites: Senior standing and PE 278 or consent of the instructor.

313. CURRICULUM CONSTRUCTION IN PHYSICAL EDUCATION. 4 HOURS. Principles of curriculum development and evaluation; analysis of age characteristics, needs, interests, and goals of students in a variety of community settings and their implication for the curriculum; development of psychomotor behavioral objectives for curricular offerings for various learning groups. Prerequisite: Ed 230.

321. APPLIED RESEARCH IN EXERCISE PHYSIOLOGY. 4 HOURS. The background and current developments relative to the cardiac, metabolic, and neuromuscular effects of physical activity; application to specific issues relating to physical activity. Prerequisite: PE 254 or consent of the instructor.

325. CIRCULATION PHYSIOLOGY. 4 HOURS. Same as Biological Sciences 376. In-depth discussion of the functional role and control of the heart, blood, major vessels, and microcirculation in the vertebrate body. Prerequisite: BioS 275 or 363.

328. ADVANCED KINESIOLOGY. 4 HOURS. Mechanics of human movement through the study and application of selected physical principles. Prerequisite: PE 253.

331. PROBLEMS AND TRENDS IN URBAN RECREATION. 4 HOURS. Identifying and collecting information for a better understanding of the major problems and issues in urban recreation and leisure science. Prerequisites: Senior standing and consent of the instructor.

333. EVALUATION TECHNIQUES IN RECREATION. 4 HOURS. Research in the field of recreation; methods and techniques in determining needs and interests for urban recreation and leisure services. Prerequisites: Senior standing and consent of the instructor.

351. EVALUATION IN PHYSICAL EDUCATION. 4 HOURS. The availability and value of evaluative tools in physical education; methods for administration of evaluative techniques; analysis of interpretation and use of the results from evaluative techniques; description of the construction of new evaluative instruments employed in physical education. Prerequisite: PE 251.

360. ADAPTED PHYSICAL EDUCATION PROGRAMS. 4 HOURS. Organization and administration; content selection, screening techniques, and instructional

designs with application of kinesiological, sociological, and psychological principles to the needs of atypical students. Prerequisite: PE 253.

362. SYNTHESIS OF HUMAN MOVEMENT CONCEPTS. 4 HOURS. Integration of selected concepts from biomechanics, exercise physiology, psychology, and sociology as they apply to the development of meaningful human movement. Prerequisites: Senior standing and consent of the instructor.

370. PHILOSOPHY OF PHYSICAL EDUCATION. 4 HOURS. Historical development of the philosophies of physical education and the assumptions on which current professional philosophies rest. Theory of knowledge in physical education.

371. THE SPORT AND PLAY OF AMERICA. 4 HOURS. The creation, importation, and derivation of sport and play in America; course of development and adaptation to the nature of American life; impact of the political, economic, cultural, and geographical factors of the character of sport and play. Special emphasis on sport and play in urban America. Prerequisite: PE 252.

372. SPORT AND PLAY IN ANTIQUITY. 4 HOURS. Sport and play in the cultural life of ancient civilizations prior to the Teutonic invasions.

373. SPORT AND PLAY OF THE NATIVE AMERICAN. 4 HOURS. Feats and games in the cultural life of the North American Indian prior to the twentieth century.

381. WORKSHOP IN PHYSICAL EDUCATION. 2 TO 4 HOURS. May be repeated for credit under different topics. Intensified study of selected activities, topics, processes, or areas. Topics are announced.

385. SPECIAL PROJECTS IN PHYSICAL EDUCATION. 2 TO 4 HOURS. Independent research on special projects. Prerequisite: Approval of the student's project by a graduate faculty member.

College of Liberal Arts and Sciences

Elmer B. Hadley, PhD, Dean
Robert E. Corley, PhD, Associate Dean
John C. Johnson, PhD, Associate Dean
Ellis B. Little, EdD, Associate Dean
James A. Bond, PhD, Assistant Dean
Nancy R. Cirillo, PhD, Assistant Dean
Wade A. Freeman, PhD, Assistant Dean
Allen H. Howard, PhD, Assistant Dean
Barbara G. Mittman, PhD, Assistant Dean
Karl F. Otto, Jr., PhD, Assistant Dean

The college provides students with varied opportunities to broaden their education within the traditions of the liberal arts. The goal of the college requirements is to enable students to become familiar with the heritage of English language and literature and with a foreign language; to develop appreciation for the scientific approach and the methodology of science, mathematics, and logic; and to become acquainted with the growing study of man in his social and behavioral patterns. The purpose of this broad and liberal course of study is to provide each student an opportunity for a better understanding of self and of the development of human society and thought.

Curricula Offered by the College

Until declaration of a major field of specialization or acceptance into a specialized program, the student enrolls in the general curriculum of the college and receives academic advising from the college office, which provides information about University and college degree requirements and advises the student in the selection of a major field.

Arts and Sciences Curricula

These curricula lead to the *Bachelor of Arts in Liberal Arts and Sciences* or to the *Bachelor of Science in Liberal Arts and Sciences*. A student chooses a major field of specialization from the following academic disciplines.

Anthropology
Biological Sciences
Black Studies
Chemistry
Classical Civilization
Classical Languages and Literature
Criminal Justice
Criminalistics
Economics
English
French
Geography
Geological Sciences
German
History
Judaic Studies
Latin American Studies
Mathematics
Music
Philosophy
Physics
Polish
Political Science
Psychology
Russian
Sociology
Spanish
Speech and Theater

Specialized Curricula

These curricula lead to the Bachelor of Arts or Bachelor of Science in the field of specialization.

Chemistry[1]
Mathematics and Computer Science
Physics[1]
Teacher Education

Teacher Education Curricula for Secondary Schools

Students who are preparing for certification in secondary school teaching enroll in curricula supervised by the departments offering the various majors. These programs, which differ in some respect from those of the arts and sciences curricula, prepare the student for certification to teach one of the following subjects in a secondary school.

Biological Sciences
Chemistry
Earth Sciences
English
French
Geography
German
History
Mathematics
Physics
Polish
Russian
Spanish
Speech

1. These curricula provide more specialized training in chemistry and physics than the arts and sciences curricula in these fields.

To register in a teacher education curriculum, a student must have a minimum grade point average of 3.50 (A=5.00) at the end of the sophomore year. The teacher education student must meet all University and college requirements for graduation. Specific requirements for teacher education majors and minors can be found in the department listings. In addition to these requirements, students in all teacher education curricula must complete the following courses.

Psychology 100—Introduction to Psychology I
Political Science 151—American Government: Organization and Powers
Education 170—Educational Foundations
Education 210—The Educative Process
Education 230—Curriculum and Instruction in the Secondary School[2]
Education 250—Educational Evaluation
Education 270—Educational Practice with Seminar I
Education 271—Educational Practice with Seminar II

Teacher education majors are also required by the State of Illinois Certification Board to complete 4.5 quarter hours in physical education and/or health science. Although courses in these areas are not required for graduation, students are advised to meet this requirement while in residence to avoid difficulty in achieving certification. For further information on secondary school teaching preparation, see *College of Education.*

Preprofessional Curricula

The preprofessional curricula are designed for students who intend to pursue their undergraduate or graduate training in a professional school of the University of Illinois. Because requirements vary among professional schools, it is important that students become familiar with the specific requirements of the institution to which they intend to apply (see *Preprofessional Programs).*

Students may register for preprofessional work in one of the following areas.

Medical Dietetics
Medical Laboratory Sciences
Medical Record Administration
Occupational Therapy[3]
Physical Therapy
Predentistry
Prelaw
Premedicine
Prenursing
Prepharmacy
Preveterinary Medicine

Graduation Requirements

A student is responsible for meeting the graduation requirements of the University and college as well as those of the major or curriculum that are

2. Education 231, 232, or 233 may be substituted for Education 230.

3. See *Preprofessional Programs—Occupational Therapy* for special admission requirements.

in effect at the time of initial registration in each. It is essential for each student to become familiar with the graduation requirements stated in this bulletin and to keep up to date with any published changes. Changes are published in the *UICC Student*. If requirements are changed, a student may elect to fulfill the new requirements or may continue to meet those that were in effect at the time of initial registration. If courses originally required are no longer offered, the college or department has the prerogative of specifying acceptable substitutes.

Grade Point Average

A student must earn a cumulative grade point average of at least 3.00 (A=5.00) in all work presented for graduation and must have at least a 3.00 in all work taken at Chicago Circle. In addition, a minimum grade point average of 3.00 is required in all courses in the major field as well as in collateral courses required for the major.

Hours Required for Graduation

A minimum of 180 hours acceptable to the College of Liberal Arts and Sciences is required for graduation. Since some curricula require more than 180 hours, consult the department listings for specific information. A maximum of 4 hours of credit in basic physical education (those numbered below 150) may be applied toward the minimum hours required for the degree. Credit earned in basic military science is not applicable to the degree; however, up to 16 hours in advanced military science (200-level courses) may be applied to the required minimum.

Residence Requirement

To be granted a degree at Chicago Circle, a student must complete either the first 135 or the last 45 hours of degree work at this campus. Work taken at the University of Illinois at Urbana-Champaign does not satisfy this requirement. Credit earned through proficiency examinations including credit earned through the College Level Examination Program (CLEP) is not applied toward the minimum 45-hour residence requirement. (Refer to *Proficiency Examinations for Enrolled Students* for additional information.) Study abroad that has been approved by the student's major department and by the college is not considered an interruption of residence for students in the College of Liberal Arts and Sciences.

Advanced Hours

At least 45 of the required 180 hours must be earned in upper-division courses during the junior and senior years at Chicago Circle or other accredited four-year schools. Upper-division courses at Chicago Circle are those numbered 200 and above.

Transfer Credit

Courses completed elsewhere may be applied in partial fulfillment of graduation requirements. The college determines the transfer hours that ap-

ply toward the degree. Courses listed for credit on a permit to enter or transcript are not necessarily accepted for the degree.

The college attempts to provide each new transfer student with a degree checklist that indicates progress in completing all general degree requirements. For an evaluation of progress in the major, the student should consult the major department during the first term at Chicago Circle.

Transfer Credit from a Community College. A student transferring from a community college must, *after attaining junior status,* earn at least 90 of the required hours either at Chicago Circle or at other accredited four-year institutions. The residence requirement must also be met.

Basic Course Requirements

English Composition

Each student must demonstrate proficiency in written expression by the successful completion of English Composition 101 and 102 or their equivalents.

Foreign Language

The basic requirement is proficiency in any language that has a recognized literature. The level of proficiency must be the equivalent of that expected of the student who has completed the elementary and intermediate levels of language study (the first two years) at Chicago Circle. The requirement may be fulfilled in any one of several ways:

1. By presenting four years of high school credit in a single foreign language. In general, a student who has presented such credit is not eligible to enroll for credit in elementary or intermediate level courses in that language.
2. By transferring credit for two years of a single language at the college level. A student transferring from another university who is admitted with senior standing and who has not yet satisfied the language requirement may do so by passing one course in a language sequence during each term in residence at Chicago Circle.
3. By completing a full sequence of language courses at Chicago Circle. The college currently offers 24-hour sequences in Arabic, Chinese, French, German, Classical Greek, Hebrew, Italian, Japanese, Latin, Lithuanian, Polish, Russian, Serbo-Croatian, Spanish, Swahili, and Yiddish.
4. By completing a partial sequence of language courses as determined by the results of a placement test. Students whose performance on the placement test indicates assignment to a more advanced course than would normally be expected based upon previous work in the language may receive some college credit.
5. By passing a proficiency examination written by arrangement with the appropriate department. Proficiency examinations are offered in languages taught at Chicago Circle and are given at the discretion of the department. A student wishing to fulfill the language requirement by demonstrating proficiency in any other language may do so by transferring appropriate academic credit in that language from another accredited institution of higher learning.

Course Distribution Requirements

The course distribution requirements provide that a student become acquainted with three areas of knowledge—the humanities, the social sciences, and the natural sciences. Each student must complete at least 12 quarter hours in the humanities, 12 in the social sciences, and 20 in the natural sciences. A maximum of 12 hours in the student's major department applies toward course distribution credit.

The following courses may be used to satisfy these requirements.

Courses Fulfilling the Requirements in the Humanities, Social Sciences, and Natural Sciences

Course work in one department may be used to fulfill the requirement in only one of the three areas.

Humanities—12 quarter hours required.

Art: 106; 208.
Asian Studies: 171; 201-203, 213, 215-217.
Black Studies: 100, 101, 121, 141, 161, 163, 170-173; 201, 204, 216, 241, 243, 245, 260, 277, 278; 341, 370, 379.
Classics: All courses except 201, 210.
English: All courses except 205, 280, 299.
French: 161-163, 167-169, 180-184, 186; all 200-level courses except 211-213, 221-223, 281, 282; all 300-level courses except 381, 382, 385.
German: 185, 190-198; all 200-level courses except 201-207, 230, 233, 240, 250, 251; all 300-level courses except 320, 321, 340, 385.
Greek: All courses except 101-106; 211, 281.
Hebrew: All courses except 101-106; 204-206.
History: All courses except 151, 152; 250-260, 287, 288, 296, 297; 351-355, 363, 380-383, 388, 389, 394, 396.
History of Architecture and Art: All courses.
Humanities: All courses.
Italian: All courses except 101-106; 205, 206, 211-213, 252, 253.
Judaic Studies: All courses except 101-106.
Latin: All courses except 101-111; 211, 281.
Latin American Studies: 161, 170, 171; 223, 224, 227, 228, 232, 261-269, 281, 283; 308-311, 315, 323, 324, 361, 390.
Linguistics: 150, 160, 170.
Lithuanian: All courses except 101-106.
Music: 100, 130, 131; 209, 214-220, 230-232, 240, 241, 288, 289, 298; 330.
Native American Studies: 106, 165; 275; 371.
Philosophy: All courses except 233; 343, 344.
Polish: All courses except 101-106; 201-203; 301-303.
Portuguese: All courses except 100-120; 201, 202.
Religious Studies: All courses except 225, 246, 291, 295, 299; 312, 315, 398.
Russian: All courses except 101-132; 201-204, 207, 260; 301-303, 307, 308, 332.
Slavic Languages and Literatures: All courses except 101-106; 340.
Spanish: All courses except 100-150, 199; 211-217, 232, 252, 253; 375.
Speech and Theater: 121-123, 141; 241; 324, 325, 351, 354, 357.
Women's Studies: 146, 152; 205.

Social Sciences—12 quarter hours required.
Anthropology: All courses except 133, 134; 235, 236; 330, 331.
Asian Studies: 220, 221, 232-234, 240, 241.
Black Studies: 102, 110, 140, 142, 150, 165; 200, 257-259, 286, 287.
Criminal Justice: 101-103, 230-232, 280; 333, 350, 398.
Economics: All courses.
Finance: 360.
Geography: 100, 110-161; 208, 210-269.
History: 100, 151, 152; 250-260, 287, 288, 296, 297; 363, 380-383, 388, 389, 394, 396.
Latin American Studies: 103, 140, 165; 215, 216, 218, 233-235, 241-244, 248, 249, 252-255, 260, 275, 282, 285, 287-290, 296, 297; 342, 354, 367, 381.
Linguistics: 150, 160, 170; 374, 380.
Native American Studies: 150, 152, 160; 221, 250, 252, 253, 261, 264, 265, 275; 320, 364, 371.
Political Science: All 100-level courses except 100; all 200-level courses except 200, 201, 299.
Psychology: All courses except 243, 299.
Religious Studies: 225, 246; 312, 315, 398.
Sociology: All courses except 201-203, 287-289, 299; 389.
Speech and Theater: 111-113, 131, 171, 191, 192; 211-213, 215; 301-303, 311-313, 315, 331, 333, 334, 372, 380; 384,
Women's Studies: 151, 153; 275.

Natural Sciences—20 quarter hours required.
Biological Sciences: All courses except 291, 299; 300.
Chemistry: All courses except 107, 108, 110, 111, 132.
Geological Sciences: All courses.
Mathematics: All courses except 100, 101, 104-108, 170-172.
Natural Sciences: All courses.
Physics: All courses.

The Major

While a student generally enters a major field of specialization during the sophomore or junior year, a major may be selected at any time after admission to the University. Requirements of the various majors are described in the department listings that follow. Of the major requirements, at least 20 hours must be taken in upper-division courses; 12 of these hours must be taken at Chicago Circle. A minimum grade point average of 3.00 is required in all courses in the major field as well as in all collateral courses required for the major.

A student may declare a second major field of specialization by indicating this intention to the college office and to the adviser in the primary major. The student should then pursue course work for each of the major fields according to the requirements of the respective departments. Cross-listed courses may serve both fields. A student need not repeat work or duplicate requirements to complete the second major.

The Minor

Although a minor is no longer required, a student may elect to complete a minor field of specialization. At least 12 hours in the minor field must be at the 200 or 300 level, except in a foreign language, where 8 hours must be at the 200 or 300 level. Requirements for the minor are described in the department listings. Such programs of study must be developed with, and approved by, an adviser in the minor department. The department may specify that at least 8 advanced hours be taken on this campus. A minimum grade point average of 3.00 is required in the minor field. A student may elect to complete more than one minor. A minor may be chosen from the following fields.

Anthropology
Asian Studies
Biological Sciences
Black Studies
Cartography
Chemistry
Criminal Justice
Economics
English
French
Geography
Geological Sciences
German
Greek
History
Italian
Judaic Studies
Latin
Latin American Studies
Linguistics
Lithuanian
Mathematics
Music
Native American Studies
Philosophy
Physics
Polish
Political Science
Portuguese
Psychology
Religious Studies
Russian
Sociology
Spanish
Speech and Theater

Probation

A student will be placed on academic probation in any term in which a cumulative or term average of less than 3.00 (A=5.00) is earned.

Drop Rules

A student may be dropped by the college if in any term any one of the following conditions apply:

1. Failure to earn at least four (4) hours credit,
2. Failure to earn at least a 2.00 (D) average,
3. Failure to earn at least a 3.00 (C) average while on probation, or
4. Failure to raise the cumulative average (if it is below 3.00) to a 3.00 within two terms.

Exceptions to these rules are sometimes made in the cases of students who have not yet completed the freshman year.

Graduation Declaration

Each student must file a Graduation Declaration form with the college office by the end of the second week of the term in which graduation is anticipated.

Graduation with Honors

To be eligible to graduate with *College Honors*, a student must meet one of the following conditions:

1. A minimum grade point average of 4.50 for the last two years (at least 72 hours) in all work completed at the University of Illinois at Chicago Circle and counted toward the degree.
2. For students whose work has been entirely in residence at Chicago Circle, a minimum grade point average of at least 4.00 in all work completed and counted toward the degree.
3. For students whose work has not been taken entirely in residence, a 4.00 in all work completed at the University of Illinois at Chicago Circle (at least 45 hours) and in all work counted toward the degree, both at the University of Illinois at Chicago Circle and elsewhere.

See department listings for the requirements for Department Honors.

Dean's List

Superior academic achievement in the College of Liberal Arts and Sciences is recognized by inclusion on the Dean's List. Eligibility is based on a 4.50 term average with a minimum program of 12 hours, exclusive of basic military science. At least 8 hours must be earned for letter grades, and a grade of Pass earned in any course taken on a pass/fail basis. Consult the college office for eligibility criteria for the eight-week summer session.

Credit for Course Work Taken outside the College

A student may offer for graduation credit as many as 48 hours in courses not included in liberal arts and sciences curricula. The first 12 hours of such work must be approved by the college office and the balance, up to the 48-hour maximum, by a student's major department. A student enrolled in a teacher education curriculum may offer as many as 48 hours of such courses in addition to required education courses; a student majoring or minoring in economics may offer as many as 48 hours of such courses in addition to courses required for that major or minor.

Pass/Fail Option

The pass/fail option allows the student to complete a course with a grade of PASS (P) or FAIL (F), rather than a letter grade. The instructor is not informed that the student has decided to take a course on this basis and submits a letter grade as usual. Grades of A, B, C, or D are recorded as P; a grade of E is recorded as F. Grades of P and F are not used in the computation of the grade point average. However, courses completed with a grade of P carry credit and may be applied toward degree requirements. In general, grades of P and F are final and cannot be changed to letter grades.

The following conditions apply:

1. Only students in good standing may elect to take a course on the pass/fail option. Students on probation at the time at which they elect the option are not eligible.
2. Only one course per term may be taken on pass/fail.
3. No more than two courses in a single discipline may be taken on pass/fail.
4. Any course may be taken on the pass/fail option except those courses being used to satisfy the requirements of the major. (Students in health science curricula are advised not to complete required science courses on a pass/fail basis.)
5. A student may earn no more than 32 hours of credit at UICC under the pass/fail option.

It is the responsibility of the student to determine eligibility under the above regulations. Students requesting a course under the pass/fail option will not be informed if they are not allowed to register for pass/fail because of ineligibility.

Completed pass/fail request forms must be submitted by the end of the tenth day of the term.

Full-Time Program

During the fall, winter and spring terms, a full-time program is 12 hours. A program of 22 hours or more must be approved by one of the college deans. During the 8-week summer session, a full-time program is 8 hours, though a student may be required to take 12 hours in order to receive some forms of financial aid (for further information check with the Office of Financial Aid). A program of 14 hours or more during the summer session must be approved by one of the college deans.

Program Changes

A student may add courses to the program during the first two weeks of a term. A student may drop courses through the sixth week of the fall, winter, and spring quarters and through the fifth week of the summer session. Course withdrawals are not permitted after these deadlines.

Certification of Irregular Students

An irregular student in the college is defined as one who holds a bachelor's degree from a recognized institution of higher learning. Although an irregular student in the College of Liberal Arts and Sciences may not earn a second bachelor's degree, the dean of the college issues a letter of certification to any such student who has completed the department requirements for an additional major in the college. (Refer to *Irregular Student Applicants* for admissions procedures.)

Student Options

Student-Designed Curriculum. Each year up to 100 students in the College of Liberal Arts and Sciences are selected for the Student-Designed Cur-

riculum Program. Participants in this program pursue a course of study based on a proposal of their own design. The student's curriculum, which may be interdepartmental, intercollege, or narrowly specialized, is created within the existing framework of courses and departments. College and University course requirements are waived for these students. However, all other graduation requirements must be met. Applicants must be at the sophomore level (46-90 hours) and have a minimum grade point average of 3.50. Application forms and information may be obtained from the college office, 350 University Hall.

Student-Initiated Courses. Some departments permit students to initiate courses for inclusion in the regular department offerings. For information, consult the appropriate department office.

Independent Study. A number of departments offer courses entitled Independent Study or Independent Research, in which a student's special interests may be pursued under the direction of a faculty member. To enroll in such a course, the student must obtain consent of the instructor and the department offering the course. As many as 32 hours of credit in independent study courses may be applied toward the degree.

Foreign Study Programs. The University offers foreign study in France, Spain, and Austria as well as the possibility of independent study abroad. For details refer to *Foreign Study Programs.*

Graduate Courses. A student may enroll in a course in the Graduate College (400 level) for undergraduate credit with the permission of the appropriate department.

Proficiency Examinations. To take a proficiency examination in a subject offered by the College of Liberal Arts and Sciences, a student must meet the requirements of the department offering the examination as well as the eligibility requirements as stated in this catalog. Refer to *Proficiency Examinations for Enrolled Students.*

Anthropology

Professors: Robert L. Hall, PhD, Chairman of the Department; Pedro Armillas, BS; Laura A. Bohannan, PhD; Charles A. Reed, PhD.

Associate Professors: Susan T. Freeman, PhD; Merwyn S. Garbarino, PhD; Paul Hockings, PhD; Michael D. Lieber, PhD; James L. Phillips, PhD; Jack H. Prost, PhD; Sylvia J. Vatuk, PhD.

Assistant Professors: Howard S. Barden, PhD; Lawrence E. Fisher, PhD; Bruce G. Gladfelter, PhD; Waud H. Kracke, PhD; Emile M. Schepers, PhD; Charles P. Warren, MA.

Lecturers: Herbert DiGioia, MFA.

Major—for the Bachelor of Arts, 52 hours, distributed as follows:
Anthropology 130, 150, 160, 200, 213, 231, 245, 280, and 12 hours of courses in anthropology at the 200 level or above, and 8 hours of courses at the 300 level.

A major interested in a subdivision of anthropology (social, physical, archeological, or linguistic) must arrange a suitable program of electives with an adviser. Each major is assigned a department adviser.

Departmental Distinction: A candidate must be eligible for College Honors, meet all the requirements for a major in anthropology, and satisfactorily complete a thesis in Anthropology 299. A student who elects a minor in anthropology may also, with the consent of the department, be awarded distinction upon satisfactory completion of Anthropology 299.

Minor—Students from other departments who wish to minor in anthropology must take Anthropology 130, 150, 160, and 20 hours of courses in anthropology at the 200 level or above, chosen in consultation with an adviser assigned by the Department of Anthropology.

Courses (Anth)

100. THE HUMAN ADVENTURE: CULTURAL AND BIOLOGICAL DEVELOPMENT OF MANKIND. 4 HOURS. No credit toward the anthropology major for students with previous courses in anthropology. Two million years of evolution and social development from the threshold of the human species to the present.

130. INTRODUCTION TO PHYSICAL ANTHROPOLOGY. 4 HOURS. Required for anthropology majors. Human origins and development; emphasis on fossil man and races.

133. HUMAN BIOLOGY I. 5 HOURS. Same as Biological Sciences 133. Survey of the structure and functions of the human body; interrelationships of the various organs and systems. Lecture, laboratory. Prerequisite: One year of biological sciences or consent of the instructor.

134. HUMAN BIOLOGY II. 5 HOURS. Same as Biological Sciences 134. The morphology and physiology of the human body; emphasis on the interrelationships of the various organs and systems. Three lectures and six hours of laboratory per week. Prerequisite: Anth 133.

150. INTRODUCTION TO ARCHEOLOGY. 4 HOURS. Same as Native American Studies 150. Required for anthropology majors. General survey of world archeology; special references to the origins and development of Old World cultures.

160. INTRODUCTION TO SOCIAL ANTHROPOLOGY. 4 HOURS. Same as Native American Studies 160. Required for anthropology majors. Survey of selected cultures of the world; emphasis on the concepts and methods of ethnology and social anthropology.

165. AFRO AND LATIN AMERICAN CULTURES OF NORTH AMERICA. 4 HOURS. Same as Black Studies 165 and Latin American Studies 165. A synchronic and diachronic survey of the subcultures of minority populations in North America; emphasis on Black and Latin American groups that have emerged in urban areas.

200. SOCIAL AND CULTURAL THEORY. 4 HOURS. Required for anthropology majors. Theoretical approaches to the study of culture and society in terms of structure, function, and process. Prerequisites: Anth 130, 150, and 160 or consent of the instructor.

201. FOLKLORE. 4 HOURS. The genres of oral tradition; special attention to the folklore of nonliterate societies. Emphasis on problems of origins, modes of transmission, structure, and functions. Prerequisite: Anth 160 or consent of the instructor.

202. AMERICAN FOLK MUSIC IN COMPARATIVE PERSPECTIVE. 4 HOURS. Separate ethnomusicological traditions and their integration into American folk music systematically studied through musical principles, instruments, and sociological contexts.

211. HISTORY OF ETHNOGRAPHIC FILM. 4 HOURS. The history of documentaries on anthropology and the use of film in anthropological research from 1895 to the present. Prerequisite: 4 hours of social sciences or consent of the instructor.

213. KINSHIP AND SOCIAL STRUCTURE. 4 HOURS. Required for anthropology majors. Introduction to social systems, with particular reference to kinship systems, lineage organizations, and collateral groupings as they structure social organization in primitive societies. Prerequisite: Anth 160 or consent of the instructor.

215. DYNAMICS OF CULTURE. 4 HOURS. Introduction to culture change, including the concepts of acculturation, culture contact, and diffusion. Prerequisite: Anth 160 or consent of the instructor.

219. LANGUAGE AND CULTURE. 4 HOURS. Language as an aspect of culture, the influence of culture on language, and the cultural role of semantic ambiguity. Problems of language in ethnographic field research and problems of translation between cultures. Prerequisite: Anth 160 or consent of the instructor.

220. CULTURE AND PERSONALITY. 4 HOURS. Introduction to the concepts, theories, and techniques of studies relating the psychology of the individual to his culture and the results of some of these studies in selected nonliterate societies. Prerequisite: Anth 160 or an introductory course in psychology or consent of the instructor.

225. NON-WESTERN RELIGIONS. 4 HOURS. Same as Religious Studies 225. The varieties of religious experience, including magic and witchcraft; the roles of priesthood, prayers, scriptures, and ceremonials in social integration; the nature of sectarian movements. Prerequisite: 4 hours of either anthropology, psychology, or sociology or consent of the instructor.

231. PRINCIPLES OF HUMAN EVOLUTION. 4 HOURS. Required for anthropology majors. The early and current theories prevalent in physical anthropology and the significance of these theories in contemporary research in biological anthropology. Prerequisites: Anth 130, BioS 100, 101, 102 or consent of the instructor.

232. HUMAN GROWTH AND MATURATION. 4 HOURS. Introduction to the basic genetic and environmental processes of human growth and development, including nutritional effects on growth and development and anthropometric, radiologic, and other methods of assessing skeletal growth and maturation. Prerequisites: Anth 130, BioS 100, 101, 102.

235. BIOLOGY AND EVOLUTION OF HUMAN BEHAVIOR. 4 HOURS. Same as Biological Sciences 235. Comparative behavior of human and nonhuman primates; biological bases of primate behavior in terms of general evolutionary trends. Critical review of the analytic methodology of the behavioral sciences. Prerequisites: One year of biological sciences and Anth 130 or consent of the instructor.

236. HUMAN GENETICS. 4 HOURS. 3 hours, lecture; 1 hour, quiz-discussion. Same as Biological Sciences 236. For anthropology majors and others interested in the social or biological aspects of human genetics or for students who are unprepared for Biological Sciences 240. Basic genetic principles applied to human heredity and diversity, family analysis, chromosomal and genic anomalies, and population, racial, and social variations. Prerequisites: Three terms of biological sciences, Math 130, and three terms of chemistry.

245. THEORY IN ARCHEOLOGY. 4 HOURS. Required for anthropology majors. Analysis of the methods and objectives of archeology in the setting of behavioral science. Emphasis on current trends in prehistoric archeology. Prerequisite: Anth 200 or consent of the instructor.

250. OLD WORLD ARCHEOLOGY I. 4 HOURS. The evolution of the Old World hunting/collecting cultures to the end of the Pleistocene. Prerequisite: Anth 150.

251. OLD WORLD ARCHEOLOGY II. 4 HOURS. Introduction to the prehistoric cultures of the Old World, the post-Pleistocene hunting/collecting cultures, and the Stone Age farming cultures. Prerequisite: Anth 150.

252. NEW WORLD ARCHEOLOGY I. 4 HOURS. Same as Latin American Studies 252 and Native American Studies 252. Introduction to the prehistoric cultures of the New World from the populating of the Americas to the beginning of the formative cultural period in the Americas. Prerequisite: Anth 150.

253. NEW WORLD ARCHEOLOGY II. 4 HOURS. Same as Latin American Studies 253 and Native American Studies 253. Introduction to the prehistoric cultures of the New World from the formative cultural period to the high civilizations of Mesoamerica and South America. Prerequisite: Anth 150.

255. FIELD METHODS IN ANTHROPOLOGY. 4 TO 12 HOURS. Supervised participation in field research. Techniques and procedures are discussed and practiced under actual field conditions at an off-campus location. Prerequisites: Anth 130 or 150 or 160 and consent of the instructor.

260. ETHNOGRPAHY OF URBAN MINORITIES. 4 HOURS. Same as Latin American Studies 260. Survey of contemporary Black and Spanish-speaking populations in urban North America; emphasis on ecological adaptations and basic principles and ideas of social anthropology. Prerequisite: Anth 160 or 165 or consent of the instructor.

261. ETHNOGRAPHY OF MESOAMERICA. 4 HOURS. Same as Latin American Studies 254 and Native American Studies 261. Preconquest civilization of Mesoamerica, the interaction of Spanish and indigenous cultures, and the present Indian cultures of this area. Prerequisite: Anth 160 or consent of the instructor.

263. ETHNOGRAPHY OF AFRICA. 4 HOURS. Survey of the culture areas of sub-Saharan Africa; societies typical of each culture area in the ethnographic present. Prerequisite: Anth 160 or consent of the instructor.

264. ETHNOGRAPHY OF NORTH AMERICA. 4 HOURS. Same as Native American Studies 264. Survey of the indigenous cultures of the Indians of North America, including some studies in culture contact. Prerequisite: Anth 160 or consent of the instructor.

265. INDIGENOUS PEOPLES OF SOUTH AMERICA. 4 HOURS. Same as Latin American Studies 255 and Native American Studies 265. Survey of the indigenous cultures in South America in the ethnographic present. Prerequisite: Anth 160 or consent of the instructor.

266. ETHNOGRAPHY OF SOUTH ASIA. 4 HOURS. Same as Asian Studies 232. Survey of the peoples of India, Pakistan, and Ceylon; emphasis on the comparative roles of indigenous and introduced cultural elements. Prerequisite: Anth 160 or consent of the instructor.

267. ETHNOGRAPHY OF THE PHILIPPINES. 4 HOURS. Same as Asian Studies 233. Survey of selected indigenous cultures of the Philippine Islands; emphasis on subsistence patterns and social organization. Prerequisite: Anth 160.

268. ETHNOGRAPHY OF SOUTHEAST ASIA. 4 HOURS. Same as Asian Studies 234. Survey of selected cultures of mainland Southeast Asia; emphasis on ecology and cultural dynanmics. Prerequisite: Anth 160 or consent of the instructor.

271. ACTION RESEARCH IN THE CITY. 4 HOURS. Methods and techniques of conducting applied research; the utility of research for social action and community development in urban areas. Examination and evaluation of traditional models of applied research in the light of the needs for positive social programs in the city. Strong emphasis on the description of applied urban research currently being conducted in Chicago in combination with an examination of applied research in other areas of the world. Development of a new model for action research in complex urban environments. Prerequisite: Anth 160 or consent of the instructor.

272. METHODS OF ACTION RESEARCH. 4 HOURS. Discussion of the methods, techniques, and relationships involved in anthropological research that seeks to contribute to action programs, positive social change, and community development. Prerequisite: Anth 271.

280. INTRODUCTION TO ANTHROPOLOGICAL LINGUISTICS. 4 HOURS. Required for anthropology majors. The concepts and techniques of anthropological linguistics with emphasis on its significance in the study of culture and society. Prerequisite: Anth 160 or consent of the instructor.

292. THE PUERTO RICAN EXPERIENCE IN THE UNITED STATES. 4 HOURS. Same as Latin American Studies 292. Analysis of the personal identity of the Puerto Rican migrant and the wider issues of the nation, national culture, and ethnos within the framework of the structures of North American society. Prerequisite: LASt 288 or Anth 160 or consent of the instructor.

299. HONORS COURSE. 4 HOURS. May be repeated for an additional 4 hours of credit. Individual study or research projects. Prerequisites: Senior standing, anthropology major, 4.00 all-University average, and consent of the instructor.

310. PEASANT SOCIETIES. 4 HOURS. Research and reading in the comparative study of peasant societies in diverse regions of the world; special emphasis on a critical review of the anthropological literature delineating a peasant stratum of social organization and defining its characteristics. Prerequisites: Junior standing, 8 hours of either social anthropology or sociology, and consent of the instructor.

311. CULTURAL PROBLEMS IN URBANIZATION. 4 HOURS. The processes of urbanization and of cultural and societal adjustments to urban life; case studies

on the variety of adjustments to urban life. Prerequisite: Anth 213 or consent of the instructor.

314. KINSHIP, FAMILY, AND HOUSEHOLD. 4 HOURS. Comparative study of the institutions of marriage, family, household; the extension of kinship norms and values to other aspects of culture and society. Prerequisite: Anth 213 or consent of the instructor.

315. COMPARATIVE RELIGIOUS MOVEMENTS. 4 HOURS. Same as Religious Studies 315. Analysis of religious behavior; special reference to the emergence of messianic cults in Africa and Melanesia and among North American Indians and New World Negroes. Prerequisites: Junior standing, 8 hours of either social anthropology or sociology, and consent of the instructor.

316. ECONOMIC LIFE OF PRIMITIVE PEOPLES. 4 HOURS. Patterns of production, distribution, and consumption in non-Western cultures. Cultural variation in attitudes toward labor, concepts of property and prestige and wealth. Prerequisite: 8 hours of social anthropology; for nonmajors, junior standing and consent of the instructor.

317. THE CROSS-CULTURAL STUDY OF SOCIAL CONTROL. 4 HOURS. Cultural-jural structures in non-Western societies; modes of dispute settlement, nature and range of sanctions, and processes of social control. Prerequisites: Junior standing and Anth 213 or 327 or consent of the instructor.

320. PSYCHOANALYTIC ANTHROPOLOGY. 4 HOURS. For social scientists. Introduction to Freud's thought and theories on dreams, child development, character, neurosis, and other psychic phenomena; the cross-cultural application of Freud's theories. Anthropological influences in the development of psychoanalytic ego psychology. Prerequisites: Anth 220 and consent of the instructor.

321. CULTURAL EVOLUTION. 4 HOURS. Critical review of theories; examination of the mechanisms of change using ethnographic materials and data on cultural change and cultural contact. Prerequisite: Anth 200 or consent of the instructor.

322. COMPARATIVE METHODS IN SOCIAL ANTHROPOLOGY. 4 HOURS. Introduction to the several kinds of comparative methods, including field work and small-sample and large-sample studies. Prerequisite: Anth 213 or consent of the instructor.

325. MEDICAL ANTHROPOLOGY. 4 HOURS. Significance of anthropological analysis and the cross-cultural perspective for medical care. Medicine as a cultural adaptive system. Social organization, politics, and economics of medical care systems, folk and modern. Folk medicine. Cross-cultural perspectives on psychiatric care. Prerequisite: Anth 200 or consent of the instructor.

327. PRIMITIVE POLITICAL SYSTEMS. 4 HOURS. Data and theory pertinent to non-Western political systems; a cross-cultural study of political behavior. Prerequisites: Junior standing and Anth 213 or consent of the instructor.

330. PRIMATE EVOLUTION. 4 HOURS. Same as Biological Sciences 330. Paleontology and systematics of fossil primates as illuminated by the anatomy, ecology, and behavior of the living populations. Prerequisite: Anth 231 or BioS 282 or 318.

331. HUMAN EVOLUTION. 4 HOURS. Same as Biological Sciences 331. Phylogeny of the primate order and the problems of speciation; particular emphasis on the relative roles of culture and nature as selective forces in human evolution. Prerequisite: Anth 231 or BioS 282 or 318.

332. HUMAN ADAPTABILITY. 4 HOURS. Biological and cultural interactions with environment in relation to adaptations of human populations. Emphasis on physiological responses of different groups to such environmental stresses as heat, cold, altitude, nutrition, exercise, and disease. Prerequisite: Anth 231 or consent of the instructor.

338. BASIC FORENSIC ANTHROPOLOGY. 4 HOURS. Same as Criminal Justice 338. Anthropological methods and techniques used to identify and interpret human remains in paleontology, archeology, and criminal insurance and mass disaster investigations. Prerequisites: Junior standing and 8 hours of either anthropology or criminal justice; Anth 231 or consent of the instructor.

342. THE ECOLOGY OF COLONIALISM IN THE AMERICAS. 4 HOURS. Same as Latin American Studies 342. The variables that conditioned different patterns of colonization and factors in the evolution of intercultural relations through the post-Columbian period in the Americas. Prerequisites: Junior standing and anthropology or Latin American studies major or consent of the instructor.

350. PROBLEMS IN PREHISTORIC ARCHEOLOGY. 4 TO 12 HOURS. May be repeated for credit up to a total of 12 hours. Archeological field techniques and principles of the study of prehistory. Case studies from selected areas of the Old and New Worlds. Prerequisites: 12 hours of archeology and consent of the instructor.

351. PREHISTORY OF THE NEAR EAST. 4 HOURS. Consideration of southwestern Asia and northeastern Africa as the core area in which the first civilization emerged. Emphasis on the late Quaternary to about 5000 BC; the interrelationships between changing environment, human ecology, and cultural evolution. Prerequisite: Anth 251 or consent of the instructor for qualified students from other departments.

352. EARLY CIVILIZATION OF THE OLD WORLD. 4 HOURS. Early civilization and incipient urbanization in Eurasia and Africa, with focus on the development of urban centers and archaic states; preconditioning factors in the post-Pleistocene, Mesolithic, and Neolithic ages. Prerequisite: Anth 251 or 351.

355. FIELD PROBLEMS IN ARCHEOLOGY. 6 TO 12 HOURS. Application of advanced techniques to the solution of special problems of archeological field investigations; laboratory analysis under actual field conditions at an off-campus location. Prerequisites: Anth 245 or 255 or concurrent registration in Anth 255 and consent of the instructor.

360. TOPICS IN ARCHEOLOGY AND ETHNOGRAPHY. 2 HOURS. May be repeated for a maximum of 16 hours of credit. Case studies of investigations in archeology and ethnography using research monographs and other primary sources. Substantive data and related theoretical problems are examined simultaneously. Prerequisite: Junior standing or consent of the instructor.

361. PROBLEMS IN MESOAMERICAN ETHNOLOGY. 4 HOURS. Same as Latin American Studies 354. Intenstive investigation of selected problems from the Mesoamerican area; special emphasis on religion, economics, and social organization. Prerequisite: Anth 261 or consent of the instructor.

362. PROBLEMS IN AFRICAN ETHNOLOGY. 4 HOURS. Survey of the indigenous cultures of Africa; native cultures as reconstructed coterminously with their early historical contacts with the Western world; additional data on present-day African cultures. Prerequisites: Junior standing and Anth 263 or consent of the instructor.

363. URBAN CULTURES OF AFRICA. 4 HOURS. The indigenous urban centers of sub-Saharan Africa and the multicultural and multiracial metropolitan areas of colonial and contemporary Africa; special reference to the processes of segregation and detribalization. Prerequisite: Anth 263 or 362 or consent of the instructor.

364. PROBLEMS IN NORTH AMERICAN ETHNOLOGY. 4 HOURS. Same as Native American Studies 364. Intensive reading and research on special problems of religious, economic, and social systems of New World native peoples. Prerequisite: Anth 264 or consent of the instructor.

365. PROBLEMS IN PACIFIC ETHNOLOGY. 4 HOURS. Ethnological survey of the indigenous peoples of Micronesia, Polynesia, Melanesia, and Australia; special emphasis on the social, economic, and religious life of representative groups. Prerequisites: Junior standing and 8 hours of social anthropology or consent of the instructor.

366. PROBLEMS IN SOUTH ASIAN ETHNOLOGY. 4 HOURS. Same as Asian Studies 336. Theoretical and substantive problems in South Asian social organization; special emphasis on systems of social stratification, kinship and family structure, religion, economy, and political processes in the context of social change. Prerequisites: Junior standing and Anth 213, 266 or consent of the instructor.

367. PROBLEMS IN SOUTH AMERICAN ETHNOLOGY. 4 HOURS. Same as Latin American Studies 367. Intensive reading and research on theoretical and ethnographic problems in South American Indian social structures and cultures. Special attention to the influence of Levi-Strauss's ideas on the formulation of cultural theory in South America. Prerequisites: Anth 213 and 265 or consent of the instructor.

368. PROBLEMS IN EUROPEAN ETHNOLOGY. 4 HOURS. Advanced reading and research on the ethnology of rural Europe; study in depth of selected case materials. Emphasis on community structure, kinship, religious and economic systems, and methods of social control; research techniques and the nature of source materials. Prerequisite: Anth 213.

380. PROBLEMS IN LINGUISTIC ANALYSIS. 4 HOURS. Same as Linguistics 380. The methods and techniques used in linguistics, with reference to actual language data; emphasis on anthropological applications. Prerequisite: Anth 280 or Ling 305 or consent of the instructor.

395. SEMINAR ON ANTHROPOLOGY. 2 TO 4 HOURS. May be repeated for a total of 16 hours of credit. For graduate students and anthropology majors. Reading, study, and discussion of selected problems. Prerequisite: Consent of the instructor.

399. INDEPENDENT STUDY. 2 TO 12 HOURS. May be repeated for credit. Independent study under the supervision of a staff member. Prerequisites: Junior standing and approval of the department.

Arabic. See Additional Courses.

Asian Studies

Committee: Herman Ooms, PhD, Chairman; Karen Alvarez, BA; Ross Edman, MA; Paul Hockings, PhD; Kenneth Madison, PhD.

Minor—24 hours, including:
Asian Studies 201, 202, 203
12 additional hours chosen with the consent of an Asian Studies adviser and concentrated in one area: China, Japan, or South Asia.

Courses (AsSt)

171. INTRODUCTION TO EAST ASIAN HISTORY. 4 HOURS. May not be repeated for credit. Same as History 171. Introduction to history and historical methods through the study of east Asian history. Particular attention to the use of primary sources in reconstructing the past.

201. HISTORY OF CHINA AND JAPAN I. 4 HOURS. Same as History 271. Topical survey of premodern China from earliest times to AD 1800: political philosophy, administrative systems, religion, social life. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

202. HISTORY OF CHINA AND JAPAN II. 4 HOURS. Same as History 272. Premodern Japan from earliest times to AD 1868: political institutions, ideology, religion, cultural life. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

203. HISTORY OF CHINA AND JAPAN III. 4 HOURS. Same as History 273. Nineteenth- and twentieth-century modern China and Japan: response to the West; modernization; intellectual, social, and political developments. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

213. JAPANESE ARCHITECTURE. 4 HOURS. Same as History of Architecture and Art 237. Religious, domestic, and landscape architecture. Prerequisite: HAA 115 or 144 or consent of the instructor.

215. ART OF CHINA. 4 HOURS. Same as History of Architecture and Art 271. Survey of Chinese painting, sculpture, and related arts from Neolithic times to the eighteenth century. Prerequisite: HAA 115 or 144 or consent of the instructor.

216. ART OF JAPAN. 4 HOURS. Same as History of Architecture and Art 272. Survey of Japanese architecture, sculpture, painting, woodcuts, and related arts from prehistoric times to the nineteenth century. Prerequisite: HAA 115 or 144 or consent of the instructor.

217. ART OF INDIA AND SOUTHEAST ASIA. 4 HOURS. Same as History of Architecture and Art 273. Survey of architecture, sculpture, and painting from the Indus Valley civilization to the Mughal period. Prerequisite: HAA 115 or 144 or consent of the instructor.

220. POLITICAL SYSTEM OF CHINA. 4 HOURS. Same as Political Science 231. Analysis of techniques of political control, with special reference to the roles of ideology and organization; China's foreign policy, emphasis on both the Sino-Soviet conflict and the Sino-American confrontation. Prerequisite: 4 hours of political science, history, or sociology.

221. POLITICAL SYSTEMS OF JAPAN AND KOREA. 4 HOURS. Same as Political Science 232. Political systems of contemporary Japan, North Korea, and South Korea. Analysis of their respective political institutions, processes, behaviors, and foreign policies. Prerequisite: 4 hours of political science, history, or sociology.

232. ETHNOGRAPHY OF SOUTH ASIA. 4 HOURS. Same as Anthropology 266. Survey of the peoples of India, Pakistan, and Ceylon; emphasis on the comparative roles of indigenous and introduced cultural elements. Prerequisite: Anth 160 or consent of the instructor.

233. ETHNOGRAPHY OF THE PHILIPPINES. 4 HOURS. Same as Anthropology 267. Survey of selected indigenous cultures of the Philippine Islands; emphasis on subsistence patterns and social organization. Prerequisite: Anth 160.

234. ETHNOGRAPHY OF SOUTHEAST ASIA. 4 HOURS. Same as Anthropology 268. Survey of selected cultures of mainland Southeast Asia; emphasis on ecology and cultural dynamics. Prerequisite: Anth 160 or consent of the instructor.

240. TOPICS IN THE GEOGRAPHY OF EASTERN ASIA. 4 HOURS. Same as Geography 266. Discussions of selected geographic aspects of physical and cultural landscapes of China, Japan, and Korea; physical regions, people, economy, and political alignments.

241. TOPICS IN THE GEOGRAPHY OF SOUTHERN AND SOUTHEASTERN ASIA. 4 HOURS. Same as Geography 267. Discussions of selected geographic aspects of physical and cultural landscapes; physical regions, people, mineral wealth, agricultural production, manufacturing, trade, political alignments.

301. TOPICS IN EAST ASIAN HISTORY. 4 HOURS. May be repeated for credit. Same as History 371. Specific topics are announced each term. Prerequisite: 4 hours of East Asian history or consent of the instructor.

314. FAR EASTERN CERAMICS. 4 HOURS. Same as History of Architecture and Art 370. History and appreciation of the major art form of China, Korea, Japan, and South Asia; pottery, stoneware, and porcelain. Prerequisites: 8 hours of Asian studies and 12 hours of history of architecture and art at the 200 level or consent of the instructor.

315. CHINESE LANDSCAPE PAINTING. 4 HOURS. Same as History of Architecture and Art 371. History from the origins to the twentieth century; major trends and figures. Prerequisite: AsSt 215 or 12 hours of Asian Studies or consent of the instructor.

316. JAPANESE PRINTS. 4 HOURS. Same as History of Architecture and Art 372. History from the fourteenth century to the present; emphasis on Ukiyoe Hanga of the seventeenth to nineteenth centuries. Prerequisite: AsSt 216 or the equivalent or consent of the instructor.

325. CHINESE PHILOSOPHY. 4 HOURS. Same as Philosophy 303. Development of the major philosophies. Prerequisite: Two courses in philosophy or junior standing and AsSt 201, 202, 203.

326. MODERN CHINESE PHILOSOPHY. 4 HOURS. Same as Philosophy 315. Development of recent Chinese systems of philosophy. Prerequisite: AsSt 325.

336. PROBLEMS IN SOUTH ASIAN ETHNOLOGY. 4 HOURS. Same as Anthropology 366. Theoretical and substantive problems in South Asian social organization; special emphasis on systems of social stratification, kinship and family structure, religion, economy, and political processes in the context of social change. Prerequisites: Junior standing and Anth 213, AsSt 232 or consent of the instructor.

Biological Sciences

Professors: Stanley K. Shapiro, PhD, Head of the Department; Louise E. Anderson, PhD; David Bardack, PhD; G. Benjamin Bouck, PhD; Donald A. Eggert, PhD; Sidney F. Glassman, PhD; Douglas Grahn, PhD (Adjunct); Bernard Greenberg, PhD; Elmer B. Hadley, PhD; Marion T. Hall, PhD (Adjunct); M.A.Q. Khan, PhD; Herbert E. Kubitschek, PhD (Adjunct); Ellis B. Little, EdD; Kenneth Madison, PhD (Emeritus); David B. Mertz, PhD; Thomas Park, PhD (Visiting); Carl Peraino, PhD (Adjunct); Albert S. Rouffa, PhD; William Sangster, PhD; Fritz Schlenk, PhD (Visiting); Max C. Shank, PhD; Warren K. Sinclair, PhD (Adjunct); Rolf Singer, PhD (Visiting); Eliot B. Spiess, PhD; John F. Thomson, PhD (Adjunct).

Associate Professors: James A. Bond, PhD; Howard E. Buhse, Jr., PhD; Shepley S.C. Chen, PhD; Michael R. Cummings, PhD; Merrill L. Gassman, PhD; Darrel L. Murray, PhD; John A. Nicolette, PhD; David G. Penney, PhD; Thomas L. Poulson, PhD; Halina J. Presley, PhD; Jack H. Prost, PhD; David Shomay, PhD; Charles N. Spirakis, PhD; Robert B. Willey, PhD; Ruth L. Willey, PhD.

Assistant Professors: Dennis M. Bramble, PhD; Adolph J. Ferro, Jr., PhD; Manuel Goldman, PhD; F. Marion Hulett, PhD; Gary Hyatt, PhD; John Lussenhop, PhD; William Mego, PhD; Dallice Mills, PhD; Donald Morrison, PhD; Dennis Nyberg, PhD; William Platt, PhD; Stephen Weller, PhD; George Wilder, PhD; Heman Witmer, PhD.

Instructors: Arthur Hirsch, MS; Rosemary A. Marone, BS; Paul Taxey, MA; Susan Teller, MS; Mohammed Younus, MA.

Major—for the Bachelor of Science, 48 hours (including a maximum of 15 hours of 100-level courses), to include each of the following:

General biology
  Biological Sciences 100, 101, 102
Genetics
  Biological Sciences 240-241
Physiological biology, *one* from
  Biological Sciences 202, 261-262, 275-276, 326-328, 363-364, 366, or 370-371-372-373
Developmental and structural biology, *one* from
  Biological Sciences 230, 232, 250, 280, 281-282, 283, 309-304, 313, 325, 333, 334-335, 356, 384, 385, 387, 389
Ecology and evolutionary biology, *one* from
  Biological Sciences 201, 220, 315 and 380, 318, 319, 320, 343, 345, 392, 395, 397

Additional courses at the 200 level or above, chosen with the consent of an adviser, from all department offerings except Biological Sciences 246 and 260, to bring the total to 48 hours in biological sciences.

Required Prerequisite and Collateral Courses
Chemistry 112, 113, 114, 232, 233, 234, 235
Physics 101, 102, 103; or 111, 112, 113
Mathematics 100, 101, 105, 130; or 104, 105, 130.

Departmental Distinction: Candidates for Departmental Distinction must perform creditably in all required advanced hours. For specific requirements consult the department at least three terms prior to planned graduation.

Minor—32 hours. Students from other departments who wish to minor in biological sciences must take Biological Sciences 100, 101, 102, and 17 hours of courses in biological sciences at the 200 level or above, chosen in consultation with an adviser in the Department of Biological Sciences.

Teacher Education in Biological Sciences: Requirements for Teaching in Secondary Schools

Major—for the Bachelor of Science, 48 hours, distributed as for majors, including Biological Sciences 307 and electives chosen to provide a balance between plant and animal biology.

Required Prerequisite and Collateral Courses
Chemistry 112, 113, 114, 232, 233, 234, 235
Physics 101, 102, 103; or 111, 112, 113
Mathematics 100, 101, 105, 130; or 104, 105, 130

Courses (BioS)

100. GENERAL BIOLOGY: THE BIOLOGY OF ORGANISMS. 5 HOURS. For science and nonscience majors. The biological principles that have emerged through the study of organisms; special attention to the higher plants and animals. Lecture, laboratory, and discussion.

101. GENERAL BIOLOGY: THE BIOLOGY OF CELLS. 5 HOURS. For science and nonscience majors. The biological principles that have emerged through the study of the cell in the twentieth century; special attention to genetic mechanisms and cell physiology. Lecture, laboratory, and discussion.

102. GENERAL BIOLOGY: THE BIOLOGY OF POPULATIONS. 5 HOURS. For science and nonscience majors. The biological principles that underlie the understanding of ecology and evolution; special attention to the origin of man and man's impact on his environment. Lecture, laboratory, and discussion.

104. NATURAL SCIENCES—LIFE EVOLVING. 4 HOURS. Same as Natural Sciences 104. Genetics, ecology, and evolution; the interaction of life and its environment—past, present, and future. Prerequisite: NatS 103 or consent of the instructor.

106. BIOLOGY IN HUMAN AFFAIRS. 3 HOURS. Not offered for credit to students who have had Biological Sciences 104 or Natural Sciences 104. A look at man, his environment, and his relationship to other men, with the intent of providing a biological perspective for past, present, and future decisions.

133. HUMAN BIOLOGY I. 5 HOURS. Same as Anthropology 133. Survey of the structure and functions of the human body; interrelationships of the various organs and systems. Lecture, laboratory. Prerequisite: One year of biological sciences or consent of the instructor.

134. HUMAN BIOLOGY II. 5 HOURS. Same as Anthropology 134. The morphology and physiology of the human body; emphasis on the interrelationships of the various organs and systems. Three lectures and six hours of laboratory per week. Prerequisite: BioS 133.

193. HONORS BIOLOGY. 1 HOUR. Open only to freshmen, sophomores, and juniors. An additional hour of related work for students registered in a course in biological sciences. May be repeated for 1 hour each term. Prerequisites: James Scholar status or approval of the department for superior students, registration in a biological sciences course (except BioS 291, 299, or 300), and consent of the instructor.

200. HISTORY OF BIOLOGY. 3 HOURS. Major problems and suggested solutions from the earliest records to the present. Prerequisite: Four terms of laboratory science.

201. TOPICS IN PLANT PHYLOGENY. 5 HOURS. Major events in the evolution of plants and selected aspects of current problems in plant phylogeny. Lecture, laboratory. Prerequisite: One year of biological sciences.

202. ELEMENTARY PLANT PHYSIOLOGY. 5 HOURS. Translocation, photosynthesis, respiration and basic metabolism, plant growth hormones, and plant growth. Prerequisite: One year of biological sciences.

205. MICROTECHNIQUE. 5 HOURS. Various methods of preparing animal and plant tissue for microscopic examination. Includes techniques and basic theories related to differential staining, histochemistry, and light microscopy. Prerequisite: One year of biological sciences.

210. SELECTED IDEAS IN REGULATORY BIOLOGY. 4 HOURS. Topics are chosen to illustrate the basic unifying principles in the biological sciences; emphasis on processes of biological thought. Lecture, laboratory. Prerequisites: One year of biological sciences and senior standing or consent of the instructor.

211. SELECTED IDEAS IN EVOLUTIONARY BIOLOGY. 4 HOURS. Topics are chosen to illustrate the basic unifying principles in the biological sciences; emphasis on processes of biological thought. Lecture, laboratory. Prerequisites: One year of biological sciences and senior standing or consent of the instructor.

218. INTRODUCTION TO PALEONTOLOGY. 4 HOURS. Same as Geological Sciences 218. The phylogeny, morphology, and ecology of fossils; emphasis on the invertebrates. Two or three Saturday field trips are required. Prerequisite: One year of biological sciences or GeolS 103 and consent of the instructor.

220. PLANT TAXONOMY. 4 HOURS. Classification and identification of flowering plants; emphasis on local flora. Lecture, laboratory, and occasional field trips. Prerequisite: One year of biological sciences.

230. BIOLOGY OF NONVASCULAR PLANTS. 4 HOURS. Structure and function in representative algae, fungi, slime molds, and bryophytes in relation to their life cycles and phylogeny. Lecture, laboratory. Prerequisite: One year of biological sciences.

231. MORPHOLOGY OF VASCULAR PLANTS. 4 HOURS. Structure, reproduction, and evolutionary history of representative vascular plants, including psilopsids, lycopsids, sphenopsids, ferns, gymnosperms, and angiosperms. Lecture, laboratory. Prerequisite: One year of biological sciences.

232. DEVELOPMENT OF STRUCTURE IN PLANTS. 4 HOURS. The developmental sequences in respect to time, light, temperature, and nutrition of selected vascular and nonvascular plants. Lecture, laboratory. Prerequisite: One year of biological sciences.

235. BIOLOGY AND EVOLUTION OF HUMAN BEHAVIOR. 4 HOURS. Same as Anthropology 235. Comparative behavior of human and nonhuman primates; biological bases of primate behavior in terms of general evolutionary trends. Critical review of the analytic methodology of the behavioral sciences. Prerequisites: One year of biological sciences and Anth 130 or consent of the instructor.

236. HUMAN GENETICS. 4 HOURS. 3 hours, lecture; 1 hour, quiz-discussion. Same as Anthropology 236. For nonmajors or students who are unprepared for Biological Sciences 240. Basic genetic principles applied to human heredity and diversity, family analysis, chromosomal and genic anomalies, and population, racial, and social variations. Prerequisites: Three terms of biological sciences, Math 130, and three terms of chemistry.

240. GENETICS. 4 HOURS. No credit for biological sciences majors unless credit is also obtained for Biological Sciences 241. Principles of heredity and variation illustrating the gene concept, genic structure, and primary function in growth and development. Lecture and discussion. Prerequisite: 12 hours of biological sciences. One year of college mathematics or organic chemistry is recommended.

241. GENETICS LABORATORY. 2 HOURS. Six hours per week in the laboratory. Experiments and demonstrations of heredity and variation using material from *Drosophila*, corn, rodents, bacteria, fungi, and viruses. Prerequisite: Credit or concurrent registration in BioS 240.

246. DRUGS IN OUR SOCIETY. 3 HOURS. No credit toward the major in biological sciences. Same as Pharmacognosy and Pharmacology 246 (Medical Center). Lecture-discussions expose the student to the scientific bases for drug action and abuse, enhance the ability to evaluate attitudes about drugs, and provide limited insight into the nature and validity of community drug knowledge. Prerequisite: One year of college biology.

250. GENERAL MICROBIOLOGY. 6 HOURS. Introduction to the principal activities and properties of microorganisms, emphasizing fundamental concepts. Lecture, laboratory, discussion. Prerequisites: One year of biological sciences and credit or registration in organic chemistry.

256. EXOBIOLOGY. 4 HOURS. Origin and early evolution of life systems in abiotic environments. Prerequisites: BioS 250 and any one of BioS 261, 275, 326, 366, or 370.

259. NEUROBIOLOGY. 4 HOURS. Same as Bioengineering 259 and Information Engineering 259. Introduction to basic anatomical and physiological concepts of the human central nervous system. Prerequisites: One year of biological sciences and senior standing or consent of the instructor.

260. BIOLOGY OF HUMAN REPRODUCTION. 3 HOURS. No credit for biological sciences majors. The anatomy and physiology of the human reproductive system. Lecture. Prerequisite: One year of biological sciences.

261. CELL PHYSIOLOGY I. 3 HOURS. The basic physiological activities common to cells. Similarities and differences in activity and control among diverse cell types. Lecture. Prerequisites: One year of general biology and Chem 233. For biological sciences majors, concurrent registration in BioS 262 is also required. Chemistry 235 is recommended.

262. LABORATORY IN CELL PHYSIOLOGY I. 3 HOURS. Laboratory experiments in functional aspects of cellular activity, such as permeability and its control, cellular respiration, nucleic acids, photosynthesis. Modern methods and instrumentation are stressed. Prerequisite: Concurrent registration in BioS 261.

275. COMPARATIVE ANIMAL PHYSIOLOGY I. 5 HOURS. Introduction to the diversity of physiological mechanisms utilized by invertebrate and vertebrate animals in maintaining homeostasis in response to various environments. Prerequisite: One year of biological sciences.

276. COMPARATIVE ANIMAL PHYSIOLOGY II. 5 HOURS. Further survey of physiological mechanisms utilized by invertebrate and vertebrate animals in maintaining homeostasis. Prerequisite: BioS 275.

280. VERTEBRATE MORPHOGENESIS. 5 HOURS. Introduction to vertebrate anatomy; emphasis on early embryology and histology. Lecture, laboratory. Prerequisite: One year of biological sciences.

281. STRUCTURE AND DEVELOPMENT OF VERTEBRATES I. 5 HOURS. With Biological Sciences 282, a two-term sequence. Evolution of vertebrate organ systems; their embryogenesis and microscopic gross anatomy. Lecture, laboratory. Prerequisite: BioS 280.

282. STRUCTURE AND DEVELOPMENT OF VERTEBRATES II. 5 HOURS. Continues Biological Sciences 281. Prerequisite: BioS 281.

283. ORNITHOLOGY. 4 HOURS. Introduction to the study of birds; their anatomy, physiology, behavior, and relationship with their environment. Special attention to migration. Prerequisite: One year of biological sciences.

284. SELECTED TOPICS IN ORNITHOLOGY. 4 HOURS. Current theories on some aspects of bird behavior. Emphasis on problems in migration and navigation. Lectures, readings, discussion. Prerequisite: BioS 283.

290. SEMINAR. 0 TO 1 HOUR. One hour of credit is given on completion of a second term. Faculty and visiting biologists discuss results of their research programs before staff and students at weekly meetings. Attendance of majors at all meetings is strongly encouraged. Prerequisites: Junior standing and biological sciences major.

291. INDEPENDENT STUDY. 1 TO 2 HOURS. Credit is contingent on approval by the research supervisor of a written report that is submitted to the department. A maximum of 8 hours of Biological Sciences 291 and/or 299 may be credited toward the department undergraduate degree requirements. Individual study in areas not covered in standard courses under close supervision of a faculty member. Prerequisites: Approval of the department and consent of the instructor.

299. INDEPENDENT RESEARCH. 2 TO 5 HOURS. Credit is contingent on approval by the research supervisor of a written report that is submitted to the department. A maximum of 8 hours of Biological Sciences 291 and/or 299 may be credited toward the department undergraduate major requirements. Prerequisites: Approval of the department and consent of the instructor. Junior standing is recommended.

303. QUANTITATIVE BIOLOGY I. 5 HOURS. Quantitative ideas and mathematical models in the development of biological theory and as a basis for biological experimentation. Lecture, laboratory. Prerequisites: Math 131 and either BioS 240, 241 or BioS 315.

304. CYTOLOGY LABORATORY. 3 HOURS. Advanced cytology; emphasis on microscopical methods. Prerequisites: BioS 261, concurrent registration in BioS 309, and consent of the instructor.

305. QUANTITATIVE BIOLOGY II. 5 HOURS. Formal aspects of biological experimentation, including the basic aspects of experimental design; interpretation of biological data. Lecture, laboratory. Prerequisite: BioS 303.

307. BIOLOGICAL METHODS FOR TEACHERS. 3 HOURS. Investigation of methodological subjects, conducted primarily as a practicum; emphasis on the development of competencies. Prerequisites: Senior standing and 40 hours of biological sciences.

309. CYTOLOGY. 3 HOURS. Structure and function of cells as revealed through historical development and research techniques. Lecture. Prerequisite: Two years of biological sciences.

310. FIELD PROBLEMS IN BIOLOGY. 2 HOURS, INTERTERM; 8 HOURS, FULL TERM. May be taken either between terms (registration in preceding term) or for a full term. Credit is given on completion of a satisfactory written report. Field research in natural habitats. Use of quantitative sampling, detailed observations, and field experiments for the solution of selected systematic, biogeographic, and ecologic questions. Prerequisites: One year of biological sciences, a biology field work course, and consent of the instructor.

313. DEVELOPMENTAL BIOLOGY. 4 HOURS. Principles governing growth and differentiation at molecular, fine structural, cellular, and organismic levels. Lecture, laboratory. Prerequisite: One year of biological sciences.

314. PLANT DEVELOPMENT. 5 HOURS. Analysis of growth in plants; modern concepts of cellular differentiation; control of plant development by intrinsic, hormonal, and environmental factors. Lecture, laboratory. Prerequisites: Chem 234; BioS 232, 313, or 333; and consent of the instructor.

315. PRINCIPLES OF ECOLOGY. 3 HOURS. Composition and distribution of biotic communities, plant and animal; emphasis on the interplay of physical and biological factors of the environment. Prerequisites: One year of biological sciences and concurrent registration in BioS 324 or 380.

316. INVERTEBRATE PALEONTOLOGY. 4 HOURS. Same as Geological Sciences 316. Phylogeny, morphology, and ecology of the fossil invertebrates. Prerequisites: BioS 218 and consent of the instructor.

317. COMMUNITY ECOLOGY. 5 HOURS. Concepts of trophic structure, niche, competition, coexistence, and diversity are used to examine theories of commu-

nity origin, change, structural-functional patterns, and distribution; emphasis on experimental bases and current problems. Prerequisites: BioS 315 and either 324 or 380.

318. VERTEBRATE PALEONTOLOGY. 4 HOURS. Same as Geological Sciences 318. Phylogeny, morphology, and ecology of the fossil vertebrates. Prerequisites: BioS 281 and consent of the instructor.

319. PALEOBOTANY. 5 HOURS. Same as Geological Sciences 319. Structure, phylogeny, and stratigraphic distribution of representative fossil plants. Lecture, laboratory, and field trips. Prerequisite: One year of biological sciences.

320. FIELD BOTANY. 5 HOURS. Flora and vegetation of the Chicago region. Lecture, laboratory, field trips. Prerequisite: One year of biological sciences.

321. PLANT GEOGRAPHY OF NORTH AMERICA. 4 HOURS. Ecological and systematic treatment of vegetation regions and principal subdivisions; emphasis on environmental factors and floras. Prerequisite: BioS 220 or 315.

322. ADVANCED TAXONOMY OF FLOWERING PLANTS. 4 HOURS. Emphasis on theories and data for evolution within groups of flowering plants. Prerequisite: BioS 220 or 345.

325. PLANT ANATOMY. 4 HOURS. The internal structure of vascular plants; emphasis on structure and function. Lecture, laboratory. Prerequisite: One year of biological sciences.

326. PLANT PHYSIOLOGY I. 3 HOURS. Structure and function of the plant cell; emphasis on membrane function, water relations, solute translocation, and photosynthesis. Prerequisites: One year of biological sciences and Chem 234.

327. PLANT PHYSIOLOGY II. 3 HOURS. Physiology of plant growth and development; photomorphogenesis and photoperiodism, flowering, and phytohormones. Prerequisites: One year of biological sciences and Chem 234.

328. PLANT PHYSIOLOGY LABORATORY I. 2 HOURS. Laboratory techniques. Prerequisite: Concurrent registration in BioS 326.

329. PLANT PHYSIOLOGY LABORATORY II. 2 HOURS. Laboratory techniques. Prerequisite: Concurrent registration in BioS 327.

330. PRIMATE EVOLUTION. 4 HOURS. Same as Anthropology 330. Paleontology and systematics of fossil primates as illuminated by the anatomy, ecology, and behavior of the living populations. Prerequisite: Anth 231 or BioS 282 or 318.

331. HUMAN EVOLUTION. 4 HOURS. Same as Anthropology 331. Phylogeny of the primate order and the problems of speciation; particular emphasis on the relative roles of culture and nature as selective forces in human evolution. Prerequisite: Anth 231 or BioS 282 or 318.

332. MORPHOGENESIS IN HIGHER PLANTS. 3 HOURS. Morphogenesis, growth, and differentiation of vascular plants and bryophytes. Emphasis on experimental approaches to plant development at the molecular, cellular, and organismic levels. Lecture. Prerequisite: BioS 232 or 333 or consent of the instructor.

333. MORPHOLOGY OF VASCULAR PLANTS. 5 HOURS. Structure, reproduction, and evolutionary history of representative vascular plants, including psilopsids, lycopsids, sphenopsids, ferns, gymnosperms, and angiosperms. Lecture and laboratory. Prerequisite: One year of biological sciences.

334. EXPERIMENTAL PHYCOLOGY. 3 HOURS. Survey of major algal groups; particular emphasis on the use of algae as experimental organisms. Prerequisites: BioS 261 or 361 or consent of the instructor.

335. LABORATORY IN EXPERIMENTAL PHYCOLOGY. 2 HOURS. Field experience in collecting and identifying common algal forms; practical experience in the use of algae as experimental organisms. Prerequisite: Credit or concurrent registration in BioS 334.

336. ANGIOSPERM MORPHOLOGY. 4 HOURS. Basic structure and major features of evolution within the flowering plants. Prerequisite: Any one of BioS 201, 232, 325, 333.

341. NON-MENDELIAN INHERITANCE. 3 HOURS. Analysis of hereditary patterns of epigenetic nuclear differentiation, the cell surface, and aging. Cytoplasmic heredity associated with symbionts, viruses, and cell organelles. Emphasis on protozoans. Prerequisites: BioS 240, Math 130.

342. CYTOGENETICS. 4 HOURS. Chromosomal phenomena involved in the mechanics of genetics, structure of genetic material, and the role chromosomal variation plays in the evolution of races and species. Lecture, laboratory, field trips. Prerequisites: BioS 240, 241.

343. POPULATION GENETICS. 3 HOURS. Genetic dynamics for animal, plant, and human populations: mating systems, selection, sampling, and mutation. Lecture and recitation. Prerequisites: Consent of the instructor or BioS 240, 241, Math 130, and credit or concurrent registration in statistics.

344. EXPERIMENTAL POPULATION GENETICS. 5 HOURS. Experimental and field empirical studies estimating genetic parameters, influence of selection, and other evolutionary forces on genotypes in populations. Lecture, laboratory, and discussion. Prerequisite: BioS 343.

345. EVOLUTION. 4 HOURS. Mechanisms of genetic and phenotypic stability and change in populations and species; modes of speciation; rationale for classification systems; nature of taxonomic characters. Prerequisites: One year of biological sciences and BioS 240, 241.

346. BACTERIAL GENETICS. 3 HOURS. The nature of the procaryotic chromosome; mechanisms of genetic exchange, including transformation, transduction, and conjugation; methods of genetic manipulation and analysis; features of bacterial genetics that facilitate molecular analysis of cell function. Prerequisites: BioS 241, 250.

347. PHYSIOLOGICAL GENETICS. 4 HOURS. Consideration of heredity at the biochemical level; particular reference to mutation, the transcription and translation of genetic information, and genetic regulatory mechanisms. Lecture. Prerequisites: BioS 240, 241, 370.

348. FUNGAL GENETICS AND DEVELOPMENT. 3 HOURS. Genetic control of development in selected species of fungi. Particular emphasis on DNA replication, genome size, transcription and translation of the genetic material, and the role of conditional lethal mutants in developmental arrest. Prerequisite: BioS 241.

349. EVOLUTIONARY THEORY. 3 HOURS. Analysis of evolutionary mechanisms in plants and animals; variation and differentiation in populations and species; origins of superspecific taxa. Prerequisites: BioS 315, 345.

350. ADVANCED MICROBIOLOGY. 4 HOURS. Modern contributions to the cellular anatomy, physiology, and genetics of microorganisms. Lecture, discussion. Prerequisite: BioS 250 or 261 or the equivalent.

351. PRINCIPLES OF CELL AND TISSUE CULTURE. 5 HOURS. Methods for primary isolation of plant and animal tissue and subsequent cultivation. Uses of cells in culture as experimental tools. Prerequisites: BioS 250, 261.

353. CHEMICAL BIOGENESIS. 4 HOURS. Same as Chemistry 353. Biosynthesis of important biological compounds. Lecture and discussion. Prerequisite: Chem 235.

356. MYCOLOGY. 4 HOURS. Analysis of the morphology, physiology, and genetics of fungi as related to the taxonomy and phylogeny of fungi. Lecture, laboratory, field trips. Prerequisite: One year of biological sciences.

359. NEUROANATOMY. 5 HOURS. Same as Bioengineering 359 and Information Engineering 359. Introduction to the neurological organization of the mammalian central nervous system. Prerequisites: BioS 280 and consent of the instructor.

361. CELL PHYSIOLOGY II. 3 HOURS. Empasizes the structural and functional interactions of cell organelles. Organelle development, physiology, and organization are considered, particularly in the context of current literature. Prerequisite: BioS 261 or the equivalent.

362. LABORATORY IN CELL PHYSIOLOGY II. 2 HOURS. Practical experience with techniques and analytical methods in cell physiology at an advanced level. An experimental approach is emphasized. Prerequisite: Credit or concurrent registration in BioS 361.

363. MAMMALIAN PHYSIOLOGY I. 5 HOURS. The role of the digestive, circulatory, respiratory, and osmoexcretory sytems in the maintenance of organismic homeostasis. Emphasis on vertebrates. Lecture, laboratory. Prerequisite: Two years of biological sciences.

364. MAMMALIAN PHYSIOLOGY II. 5 HOURS. The role of the muscular, sensory, nervous, and endocrine systems in the maintenance of organismic integration. Emphasis on vertebrates. Lecture, laboratory. Prerequisite: Two years of biological sciences. Credit in Biological Sciences 363 is highly recommended.

366. MICROBIAL PHYSIOLOGY I. 5 HOURS. Organization of physiological processes in various groups of microorganisms: comparative biochemistry of energy-yielding mechanisms; biosynthesis of macromolecules; ecological implications of microbial metabolism. Lecture, discussion, laboratory. Prerequisite: BioS 250 or the equivalent.

368. VIROLOGY. 4 HOURS. Nature of viruses and their morphology. Chemical composition, assay, host-parasite interactions, and life cycles. Lecture, discussion. Prerequisite: BioS 250 or 261.

370. BIOCHEMISTRY I. 4 HOURS. Same as Chemistry 350. Chemistry of biological systems, including proteins and enzymes. Prerequisites: Chem 119 or 121 and credit or registration in Chem 235.

371. BIOCHEMISTRY II. 4 HOURS. Same as Chemistry 351. Continues Biological Sciences 370. Carbohydrates and lipid metabolism. Electron transport. Prerequisite: BioS 370.

372. BIOCHEMISTRY III. 4 HOURS. Same as Chemistry 352. Continues Biological Sciences 371. Metabolism of amino acids, nucleic acids, proteins, and the biosynthesis of biological macromolecules. Prerequisite: BioS 371.

373. BIOCHEMISTRY III LABORATORY. 2 HOURS. Experiments in macromolecular biochemistry, including cell fractionation, enzyme regulation, use of radioactive isotopes, and protein synthesis. Prerequisite: Concurrent registration in BioS 372 or Chem 352.

375. COMPARATIVE VERTEBRATE PHYSIOLOGY I. 4 HOURS. Comparison of selected physiological adaptions of various vertebrate groups to the factors of the environment at the whole animal and organ system levels. Lecture and laboratory. Prerequisite: BioS 275 or BioS 363 and 364 or the equivalent.

376. CIRCULATION PHYSIOLOGY. 4 HOURS. Same as Physical Education 325. In-depth discussion of the functional role and control of the heart, blood, major vessels, and microcirculation in the vertebrate body. Prerequisite: BioS 275 or 363.

377. ENDOCRINOLOGY. 5 HOURS. Animal hormones in the control of integration, homeostasis, growth, and development. Lecture, laboratory. Prerequisite: BioS 364.

380. ECOLOGY LABORATORY. 3 HOURS. Population and community assemblages of the Chicago region. Laboratory and required field trips (Saturdays in the fall, Sundays in the spring). Prerequisite: Concurrent registration in BioS 315.

381. ENVIRONMENTAL TOXICOLOGY. 5 HOURS. Same as Pharmacognosy and Pharmacology 381 (School of Public Health). Chemical contamination of air, water, and soil. Health, ecological, and economic aspects of environmental pollutants. Lecture, laboratory, discussion, and field trips. Prerequisite: One course in cell or animal physiology or biochemistry or consent of the instructor.

382. ENVIRONMENTAL CONSERVATION. 4 HOURS. Applied ecology of the use of renewable natural resources; special emphasis on biotic problems of land, water, and air management; pollution, population increase, multiple-use concept, and land ethics. Lecture, discussion, and term paper. Prerequisite: Credit or concurrent registration in BioS 315 and either 324 or 380 or consent of the instructor.

384. INVERTEBRATE PROTOSTOMES. 5 HOURS. Comparative study of structure, development, behavior, classification, and evolution of the annelid-arthropod line of invertebrates; emphasis on parasitism. Lecture, laboratory. Prerequisite: One year of biological sciences.

385. INVERTEBRATE RADIATA AND DEUTEROSTOMES. 5 HOURS. Comparative study of structure, development, classification, and evolution of the radiate and chordate lines of invertebrates; emphasis on colonial specialization. Lecture, laboratory, and research topic. Prerequisite: BioS 384 or consent of the instructor.

387. GENERAL ENTOMOLOGY. 5 HOURS. Biology, classification, and functioning of insects; their adaptations and importance. Students planning to enroll should begin collecting insects the previous spring and summer. Lecture, laboratory, field trips. Prerequisite: One year of biological sciences.

388. APPLIED ENTOMOLOGY. 5 HOURS. Biology, control, and importance of arthropods of economic and public health significance. Lecture, laboratory, field trips. Prerequisite: BioS 387 or the equivalent.

389. PRINCIPLES OF PROTOZOOLOGY. 5 HOURS. Introduction to the comparative morphology, physiology, and systematics of the protozoa, including discussion of advances in major areas of current research. Lecture, laboratory. Prerequisite: One year of biological sciences.

392. FUNCTIONAL AND EVOLUTIONARY VERTEBRATE MORPHOLOGY. 5 HOURS. Functional analysis of vertebrate structure and development within an evolutionary framework. Introduction to analytical and experimental techniques in vertebrate morphology, such as biomechanics and high-speed cinematography. Prerequisite: BioS 280.

393. FUNCTIONAL ANIMAL MORPHOLOGY. 4 HOURS. Functional analysis of selected invertebrate and vertebrate organ systems applied to problems of comparative structure, adaptation, and phylogeny. Lecture, laboratory. Prerequisites: Senior standing and consent of the instructor.

395. BIOGEOGRAPHY. 3 HOURS. Geological and biological factors leading to past and present distribution patterns of animals; emphasis on current experimental methods to elucidate mechanisms of origin and diversification of island and continental faunas. Prerequisite: Senior standing.

397. ICHTHYOLOGY AND HERPETOLOGY. 5 HOURS. Ecology, speciation, and adaptive modifications of fishes, amphibians, and reptiles as demonstrated from experimental and descriptive studies. Prerequisite: Any one of BioS 218, 240-241, 280, 281.

Black Studies

Professors: Grace S. Holt, PhD, Director of the Program.

Associate Professors: Gerald A. McWhorter, PhD.

Assistant Professors: Randall H. Evans, Jr., PhD (DM); Harold R. Teasley, PhD (Visiting).

Instructors: Sterling D. Plumpp, BA; Leslie A. Reovan, MA.

Lecturers: Johari M. Kunjufu, MA; Marcyliena Morgan, MA.

Teaching Associates: Preston E. Williams, BA.

The Bachelor of Arts is awarded to students who fulfill the general University and the College of Liberal Arts and Sciences graduation requirements and successfully complete the curriculum in Black studies.

Major—44 hours, of which 24 hours must be at the upper-division level. Every student's program must include Black Studies 170, 171, 277, 278, 370, and 24 additional hours in courses listed as Black studies.

In addition to satisfying the above major requirements, all Black studies majors must take an additional 8 hours of courses in humanities chosen in consultation with a department adviser.

Minor—32 hours, including Black Studies 170, 171, 277, 278, 370, and 12 additional hours in Black studies courses chosen in consultation with a department adviser.

Courses (BlSt)

100. VISUAL STUDIES IN BLACK CULTURE. 4 HOURS. An introductory course. The esthetic, artistic, and visual imagery produced by Afro-American culture, including the wall muralists and Afro-American folk artists.

101. INTRODUCTION TO AFRO-AMERICAN STUDIES I. 4 HOURS. Historical and contemporary experiences of Afro-American people. Topics include slavery, social structure, political economy, racism, and liberation struggles.

102. INTRODUCTION TO AFRO-AMERICAN STUDIES II. 4 HOURS. Continues Black Studies 101. Several fundamental problem areas of the Afro-American experience: struggle for democratic rights, social classes, rural and urban community development, leadership, and ideology. Prerequisite: BlSt 101.

110. THE BLACK FAMILY IN THE UNITED STATES. 4 HOURS. The family and the Black experience: analysis and interpretation of the relationship between racial oppression and family structure and functions.

121. INTRODUCTION TO THE WEST INDIAN SOCIETIES. 4 HOURS. Peoples, cultures, social structures; the role of race and color and the question of ethnicity, expecially Afro-Caribbean; emphasis on the Commonwealth Caribbean (English-speaking territories).

130. WORKSHOP IN BLACK CREATIVE WRITING. 2 HOURS. Introduction to and practice in creative writing utilizing Black oral tradition. Major consideration is given to how Black people use and respond to oral cues in writing.

131. WORKSHOP IN BLACK CRITICISM. 2 HOURS. A skills approach to how people write. Focus on how to systematize opinion about Black movies, records, social events, and ideologies.

140. BLACK IDENTITY: INTRODUCTION TO BLACK PSYCHOLOGY. 4 HOURS. Historical analysis of the pathological effects of racism on the social-psychological dimensions of Black identity. The new Black ethnic is presented as a therapeutic reaction to the ecology of racism. Special attention to the development of a Black psychology.

141. INTRODUCTION TO AFRICAN HISTORY. 4 HOURS. May not be repeated for credit. Same as History 141. Introduction to history and historical methods through the study of African history. Particular attention to the use of primary sources in reconstructing the past.

142. BLACK BEHAVIORIAL PATTERNS. 4 HOURS. Formal theories on personality in terms of interdependence between personal characteristics, Black culture, and oppression; the social-psychological aspects of Black identity as a mental health construct; interpresonal behaviors of Afro-Americans are analyzed from a "game theory" perspective. Prerequisite: BlSt 140.

150. COMPARATIVE SLAVE SYSTEMS IN THE AMERICAS. 4 HOURS. An introductory course. Historical perspective, basic themes, and issues. Contrastive study of major theoretical contributors. Prerequisite: BlSt 121 or consent of the instructor.

159. JAZZ LABORATORY ENSEMBLE. 1 HOUR. May be repeated for credit. Same as Music 159. Practical experience in the preparation and performance of jazz compositions and arrangements; improvisational procedures. Regular performances throughout the school year. Field trips may be required. Prerequisite: Consent of the instructor, determined by an audition.

161. INTRODUCTION TO BLACK RELIGION. 4 HOURS. Same as Religious Studies 161. Introduction to the literature of the Black church and exposure to the living actuality in Chicago. Lecture topics include African influences, the nature of symbols, music, preaching, and the future of the Black church.

163. THE PREACHING OF THE BLACK CHURCH. 4 HOURS. Same as Religious Studies 163. The central role of the preacher in the life of the Black church. Particular attention to the importance of mythology and symbol, Martin Luther King, Jr., recorded examples, and understanding the context of Black preaching.

164. THE MUSIC OF THE BLACK CHURCH. 4 HOURS. Same as Religious Studies 164. The important role of music in the Black church experience. Particular attention to the spirituals and the gospel music of the urban religious experience; relationship to the phenomenon of tragedy.

165. AFRO- AND LATIN AMERICAN CULTURES OF NORTH AMERICA. 4 HOURS. Same as Anthropology 165 and Latin American Studies 165. A synchronic and diachronic survey of the subcultures of minority populations in North America; emphasis on Black and Latin American groups that have emerged in urban areas.

170. INTRODUCTION TO BLACK CULTURE I. 4 HOURS. African, Caribbean, and Afro-American history; Black institutions and folklore.

171. INTRODUCTION TO BLACK CULTURE II. 4 HOURS. African, Caribbean, and Afro-American history; Black institutions, folklore, and creative works. Prerequisite: BlSt 170.

172. THE BLACK ESTHETIC. 4 HOURS. Introduction to a Black esthetic with particular reference to the Pan-African continuum—exploring voodoo, Mau Mau, Black American church, dance, music, plastic arts. Prerequisite: BlSt 170 or consent of the instructor.

173. THE BLACK NOVEL: AFRICAN, CARIBBEAN, NORTH AMERICAN. 4 HOURS. The Black experience through the study and analysis of selected Afro-American, Afro-Caribbean, and continental African novels; critical examination of comparative essays written about the Black novel.

200. INTRODUCTION TO RESEARCH IN THE BLACK COMMUNITY. 4 HOURS. Research in or on the Black community. Associated concepts, tech-

niques, problems, design, and data collection and analysis. Written report. Prerequisite: BlSt 171.

201. INTRODUCTION TO BLACK FOLKLORE. 4 HOURS. Introduction to the concepts, theories, and comparative methods of studies in folklore. A synchronic and diachronic survey of selected African, Afro-Caribbean, and Afro-American oral traditions.

204. PHILOSOPHICAL TOPICS IN THE LITERATURE OF BLACK PEOPLE. 4 HOURS. Same as Philosophy 204. Philosophical themes in the writings of Frederick Douglass, Solomon Northrup, Franz Fannon, and other Black writers. Prerequisite: Phil 101.

210. BLACK NATIONALISM IN THE UNITED STATES. 4 HOURS. Analysis and interpretation of the natures, causes, and consequences of the Black nationalist movements.

216. POLITICAL AND SOCIAL PHILOSOPHY. 4 HOURS. Same as Philosophy 216. Introduction to issues concerning political institutions and practices. Theories on how to evaluate laws and explain the obligation to obey the law.

241. AFRICAN HISTORY TO 1640. 4 HOURS. Same as History 241. Development of human civilization; the rise of kingdoms and territorial states; migration of peoples; the spread and impact of Islam; the imposition of Portuguese and Omani empires. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

243. AFRICAN HISTORY: 1640 TO 1881. 4 HOURS. Same as History 243. The nature of European influence in Africa; trading networks, the rise of kingdoms in the West African forest, the south-central savanna, and the southeastern coast; Jihad movements; the development of indigenous African empires. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

245. AFRICAN HISTORY: 1881 TO THE PRESENT. 4 HOURS. Same as History 245. The effect of European partition and colonialism on African peoples; African military and political resistance movements; the rise of nationalism. the problems of independence. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

257. AFRO-AMERICAN HISTORY TO 1850. 4 HOURS. Same as History 257. African origins of the American Black population; the slave trade and the African diaspora in the Western Hemisphere; the origins and development of American slavery. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

258. AFRO-AMERICAN HISTORY FROM 1850 TO 1900. 4 HOURS. Same as History 258. Black abolitionism; emancipation; Reconstruction; the growth of Black institutions; the origins of racial segregation; pretwentieth-century migration movements. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

259. AFRO-AMERICAN HISTORY SINCE 1900. 4 HOURS. Same as History 259. Urbanization and the emergence of the Black ghetto; the various strategies of the civil rights movement; Black nationalism and Black power. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

260. THE PROBLEM OF EVIL AND THE BLACK CHURCH. 4 HOURS. Same as Religious Studies 260. The classic problem of evil in light of the distinctive experience of the Black religious traditions. Classic treatments reviewed include Albert Camus and Paul Ricoeur. Black writers examined are William Jones and Joseph Washington. Prerequisite: BlSt 161 or 163 or consent of the instructor.

277. CULTURAL VALUES IN AFRICAN LITERATURE I. 4 HOURS. A two-term sequence that covers a selection of writings by African people in Africa and the Americas. The experiences of Africans in both hemispheres are paralleled in a general chronological order; the values and modes of expression are examined within their sociohistorical frames. Values reflected in the literature are observed as integral parts of the creative process, stemming from the authors' orientation to their people as African people, their self-concepts, and social setting. Prerequisite: BlSt 171 or consent of the instructor.

278. CULTURAL VALUES IN AFRICAN LITERATURE II. 4 HOURS. A two-term sequence that covers a selection of writings by African people in Africa and the Americas. The experiences of Africans in both hemispheres are paralleled in a general chronological order; the values and modes of expression are examined within their sociohistorical frames. Values reflected in the literature are observed as integral parts of the creative process, stemming from the authors' orientation to their people as African people, their self-concepts, and social setting. Prerequisite: BlSt 277.

296. HISTORY OF MINORITIES IN THE UNITED STATES: COLONIAL PERIOD THROUGH RECONSTRUCTION. 4 HOURS. Same as History 296 and Latin American Studies 296. Racial, ethnic, religious, and political minorities in the United States. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

297. HISTORY OF MINORITIES IN THE UNITED STATES: RECONSTRUCTION TO THE PRESENT. 4 HOURS. Same as History 297 and Latin American Studies 297. Racial, ethnic, religious, and political minorities in the United States. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

298. INDIVIDUAL STUDY: SPECIAL TOPICS. 4 HOURS. Selected topics for individual research. Prerequisite: Consent of the instructor and the Black Studies Program director.

341. TOPICS IN AFRICAN HISTORY. 4 HOURS. Same as History 341. Study in depth of specific problems of internal African history, with concentration on such topics as the African role in the slave trade, the growth and decline of African states, African syntheses with European culture, or the African reaction to European domination and conquest. Prerequisite: 4 hours of African history.

349. AFRICAN HISTORY SEMINAR ABROAD. 8 TO 16 HOURS. Same as History 349. Lectures, seminars, and independent study in Africa for one term. Prerequisites: 8 hours of African history and consent of the instructor.

370. TOPICS IN BLACK CULTURE. 4 HOURS. May be repeated for a maximum of 12 hours of credit, 4 hours of which are required for the major. Seminar on various topics. Specific topics are announced each term. Prerequisite: BlSt 171.

379. AFRO-FRENCH LITERATURE. 4 HOURS. Same as French 379. Selected prose and poetry in French by Black authors. Prerequisites: Fr 201 and any two of Fr 202, 203, 204, 205 or the equivalents or consent of the instructor.

Cartography. See Geography.

Chemistry

Professors: William F. Sager, PhD, Head of the Department; Joseph H. Boyer, PhD; Thomas H. Brown, PhD; Richard L. Carlin, PhD; Ferris B. Crum, PhD (Emeritus); Roy Huitema, PhD (Emeritus); Charles K. Hunt, PhD (Emeritus); Jacques Kagan, PhD; John H. Kiefer, PhD; Chui Fan Liu, PhD; Clifford N. Matthews, PhD; Robert M. Moriarty, PhD; Jan Rocek, PhD; Robert I. Walter, PhD.

Associate Professors: Ronald J. Baumgarten, PhD; Richard P. Burns, PhD; Eric A. Gislason, PhD; David Gorenstein, PhD; Anatol Gottlieb, TScD (Emeritus); Cynthia A. Jameson, PhD; Richard J. Kassner, PhD; Rosalind A. Klaas, PhD (Emeritus); Victor Mansfield, PhD (Emeritus); William L. Mock, PhD; Hans T. Mueller, PhD (Emeritus); Samuel Schrage, PhD.

Assistant Professors: Sheila Cohen, PhD (Visiting); John W. Cowin, MS (Emeritus); Barry DeBoer, PhD (Visiting); Thomas A. DeFanti, PhD; Wade A. Freeman, PhD; John I. Gelder, PhD; John Gilmore, PhD (Visiting); Robert J. Gordon, PhD; Florence C. Klee, PhD; Leonard Kotin, PhD; Pierre R. LeBreton, PhD; Thomas A. Lothian, MA; James N. McElearney, PhD; Robert J. Newland, PhD; Edward Rietz, PhD; Eva Rocek, PhD; George I. Sackheim, MS; Robert N. Schwartz, PhD; Frances K. Seabright, MS; John F. Steiner, PhD (Emeritus); Milton Yusem, PhD (Emeritus).

Instructors: Shafeek Farag, MA; Elaine Herzog, MS; James Luurs, MS; Clarence J. Perry, MEd (Emeritus).

Research Associates: Som Bhatia, PhD; John Findlay, PhD; Miroslav Krumpolc, PhD; Robert Momii, PhD; K.G. Srinivasan, PhD.

Major—for the Bachelor of Arts, 54-56 hours, distributed as follows:
Chemistry 112, 113, 114, 121 or 117, 118, 119
232, 233, 234, 235, 236, 237, 282
340, 341, 342, 343, 344, 345 or
380, 382, 383, and 10 additional hours of 300-level courses as the department recommends.
Required Prerequisite and Collateral Courses
Mathematics 104 and 105 (if needed); 130, 131, 132
Physics 111, 112, 113 (recommended) or Physics 101, 102, 103
Chemistry majors are assigned a department adviser.

For majors considering a career in chemistry, the 340 sequence of physical chemistry is recommended.

See also *Chemistry Curriculum.*

Departmental Distinction: Candidates for Departmental Distinction must perform creditably in all required advanced hours. For specific requirements consult the executive secretary of the department at least two terms before graduation.

Minor—Students from other departments who wish to minor in chemistry must take 32 hours of courses, chosen with the consent of an adviser in the Department of Chemistry. The following are required:
20 hours in Chemistry 112, 113, 114, and 121
12 additional hours at the 200 or 300 level; at least 8 advanced hours must be taken in residence.

Teacher Education in Chemistry: Requirements for Teaching in Secondary Schools

Major—for the Bachelor of Science, 51 hours, distributed as follows:
Chemistry 112, 113, 114, 121 or
117, 118, 119
232, 233, 234, 235, 236, 285
340, 341, 342, 343, 344, 345 or 380, 382, 383, and 3 hours of 300-level courses
Supporting Courses—42 hours
Mathematics 130, 131, 132, 133; 104 and 105 if needed
Physics 111, 112, 113 (recommended) or Physics 101, 102, 103
Science electives must be chosen in consultation with the adviser.

Chemistry Curriculum

The Bachelor of Science in Chemistry is awarded students who successfully complete 192 hours, exclusive of basic military science, in this curriculum. This course of study satisfies all the requirements set by the American Chemical Society for professional accreditation.

Prerequisites for Chemistry 340 must be fulfilled before the fall quarter of the student's junior year.

English Composition 101, 102	8 hours
German or Russian[1]	0-24
Humanities	12
Social Sciences	12
Mathematics 130, 131, 132, 133	20
Physics 111, 112, 113	14
Chemistry 117, 118, 119 or 112, 113, 114, 121 if the department recommends	18-20
232, 233, 234, 235, 236, 237	16
340, 342, 344, 347	16
341, 343, 345	6
314, 315, 321	13
Advanced natural sciences and/or mathematics electives approved by the adviser	16
Electives	15-41

Courses (Chem)

103. NATURAL SCIENCES—CHEMICAL EVOLUTION. 4 HOURS. Same as Natural Sciences 103. The architecture of matter: energy and the molecular basis of life and evolution.

107. SELF-PACED INTRODUCTION TO COLLEGE CHEMISTRY I. 3 HOURS. For students without entrance credit in high school chemistry or inadequately prepared for Chemistry 112. Prerequisite: Approval of the department. Eligibility is determined by performance on a placement test.

108. SELF-PACED INTRODUCTION TO COLLEGE CHEMISTRY II. 1 HOUR. Continues Chemistry 107. Prerequisite: A grade of Incomplete in Chemistry 107.

1. The equivalent of two years in a single language at the college level; French may be accepted; consult the Department of Chemistry.

110. PROBLEM-SOLVING AND CONCEPTS IN CHEMISTRY. 3 HOURS. An individualized course in problem-solving and mastery of the skills and concepts presumed in Chemistry 111. Prerequisites: Math 170, 171, and recommendation of the department.

111. INTRODUCTION TO CHEMISTRY. 4 HOURS. For students without entrance credit in high school chemistry or inadequately prepared for Chemistry 112. Prerequisite: Satisfactory performance on a placement test.

112. CHEMICAL BONDING AND STRUCTURE. 5 HOURS. For students with one year of high school chemistry and adequate preparation, as shown by a placement test. Atomic and molecular structure; chemistry of the covalent and ionic bond. Prerequisite: Chem 111 or adequate performance on the placement test.

113. EQUILIBRIA: CHEMISTRY OF SOLUTIONS. 5 HOURS. Acid-base reactions, solubility relations, oxidation potentials, qualitative analysis. Prerequisite: Chem 112 or superior performance on the placement test or advanced placement or Chem 117. College algebra or the equivalent is strongly recommended.

114. STRUCTURE AND REACTIVITY. 5 HOURS. Elementary thermodynamics and kinetics; electrochemistry. Prerequisite: Chem 113 or advanced placement.

117. GENERAL AND ANALYTICAL CHEMISTRY I. 6 HOURS. Primarily for students in the chemistry, chemical engineering, and physics curricula and natural sciences majors. Prerequisite: Superior performance on the placement test.

118. GENERAL AND ANALYTICAL CHEMISTRY II. 6 HOURS. Continues Chemistry 117. Prerequisite: Chem 117 with a grade of C or higher.

119. GENERAL AND ANALYTICAL CHEMISTRY III. 6 HOURS. Credit is not given for Chemistry 119 if the student has credit in Chemistry 121. Continues Chemistry 118. Special emphasis on quantitative analysis. Prerequisite: Chem 118.

121. ANALYTICAL CHEMISTRY. 5 HOURS. Credit is not given for Chemistry 121 if the student has credit in Chemistry 119. Volumetric, gravimetric, and instrumental methods of analysis. Prerequisite: Chem 114 or Chem 113 and SysE 150 or advanced placement.

132. ELEMENTARY ORGANIC CHEMISTRY. 5 HOURS. Primarily for prenursing students. Does not satisfy the organic chemistry prerequisite for biochemistry or for advanced courses in organic chemistry. Prerequisite: Chem 112.

232. ORGANIC CHEMISTRY I. 4 HOURS. Organic structure and synthesis and the mechanisms of organic reactions. Prerequisite: Chem 114 or 119 or 121.

233. ORGANIC CHEMISTRY II. 4 HOURS. Continues Chemistry 232. Prerequisite: Chem 232.

234. ORGANIC CHEMISTRY LABORATORY I. 1 HOUR. Introduction to laboratory principles and techniques. Prerequisites: Chem 232 and concurrent registration in Chem 233.

235. ORGANIC CHEMISTRY III. 4 HOURS. Continues Chemistry 233. Prerequisite: Chem 233.

236. ORGANIC CHEMISTRY LABORATORY II. 1 HOUR. Continues Chemistry 234. Experiments on the properties of functional groups and in synthesis selected to illustrate fundamental principles and introduce new techniques. Prerequisites: Chem 233, 234.

237. ORGANIC CHEMISTRY LABORATORY III. 2 HOURS. Continues Chemistry 236. Prerequisite: Chem 236.

281. ELEMENTS OF GLASS BLOWING. 1 HOUR. Demonstrations and practice in glass blowing and the construction of simple laboratory equipment. Prerequisites: Junior standing in chemistry and consent of the instructor.

282. CHEMICAL LITERATURE. 2 HOURS. Survey of chemical information sources and retrieval procedures. Prerequisites: 24 hours of chemistry and 16 hours of German, Russian, or French or the equivalent.

285. HISTORY OF SCIENCE WITH PARTICULAR REFERENCE TO CHEMISTRY. 3 HOURS. The historical development of leading ideas in science and chemistry. Prerequisite: 26 hours of laboratory science.

295. ENVIRONMENTAL CHEMISTRY. 3 HOURS. Underlying chemical and biochemical elements of atmospheric, land, and water pollution. Discussion of chemical pollutants and chemical reactions in pesticides, food additives, industrial wastes, natural toxins, and the atmosphere and their relation to land pollution; the role of phosphates and alternatives to them evaluated on the basis of chemical and biochemical factors. Prerequisite: Chem 234.

314. INORGANIC CHEMISTRY. 4 HOURS. Lectures and assigned readings on the chemistry of selected elements. Prerequisite: Chem 340.

315. INORGANIC CHEMISTRY. 4 HOURS. Lectures and assigned readings in structural inorganic chemistry, inorganic reaction mechanisms and techniques, and the nature of the coordinate bond. Prerequisite: Chem 342 or the equivalent.

316. INORGANIC CHEMISTRY LABORATORY. 2 HOURS. Synthesis of inorganic compounds illustrating the use of modern preparative techniques. Prerequisite: Credit or registration in Chem 315.

321. INSTRUMENTAL ANALYSIS. 5 HOURS. Survey of contemporary instrumentation for chemical analysis. Emphasis on methods with actual experience on typical equipment. Prerequisites: Chem 235 and credit or registration in Chem 343 or the equivalents.

322. PRINCIPLES OF CHEMICAL INSTRUMENTATION. 5 HOURS. Construction and principles of modern chemical instrumentation. Emphasis on solid state electronic devices, including general digital electronics. Recommended as adjunct to Chemistry 321, particularly for students specializing in physical or analytical chemistry. Prerequisite: Credit or registration in Chem 341.

327. APPLIED ANALYTICAL CHEMISTRY I. 5 HOURS. Same as Criminal Justice 314. Theory and procedures of separation, purification, and identification of components of industrial and forensic interest. Prerequisites: Chem 121, 235 or CrJ 313 or consent of the instructor.

328. APPLIED ANALYTICAL CHEMISTRY II. 5 HOURS. Same as Criminal Justice 315. Advanced instrumental analytical procedures applied to substances of industrial and forensic interest. Prerequisite: Chem 327 or consent of the instructor.

338. SYSTEMATIC IDENTIFICATION OF ORGANIC COMPOUNDS. 3 HOURS. Primarily a laboratory course; chemical, physical, and spectroscopic methods are used to separate, purify, and identify organic compounds. Prerequisite: Chem 237.

339. ORGANIC SYNTHESIS. 2 TO 4 HOURS. Discussion and laboratory work involving special techniques. Prerequisite: Chem 237 or the equivalent.

340. PHYSICAL CHEMISTRY I. 4 HOURS. Credit is not given for both the Chemistry 340, 342, 344 sequence and the 380, 382 sequence. Introduction to chemical principles. Prerequisites: Chem 119 or 121, credit or registration in Math 133, and one year of college physics.

341. PHYSICAL CHEMISTRY LABORATORY I. 2 HOURS. Quantitative experimental study of chemical principles. Prerequisite: Concurrent registration in Chem 340.

342. PHYSICAL CHEMISTRY II. 4 HOURS. Continues Chemistry 340. Prerequisite: Chem 340.

343. PHYSICAL CHEMISTRY LABORATORY II. 2 HOURS. Continues Chemistry 341. Prerequisites: Chem 341 and concurrent registration in Chem 342.

344. PHYSICAL CHEMISTRY III. 4 HOURS. Continues Chemistry 342. Prerequisite: Chem 342.

345. PHYSICAL CHEMISTRY LABORATORY III. 2 HOURS. Continues Chemistry 343. Prerequisites: Chem 343 and concurrent registration in Chem 344.

347. INTRODUCTION TO QUANTUM CHEMISTRY. 4 HOURS. Applications of quantum mechanics to problems of chemical interest. Additional assignments are required. Prerequisite: Chem 344.

348. THERMODYNAMICS. 4 HOURS. Lectures and assigned readings; applications to chemical systems. Prerequisite: Chem 344.

349. STATISTICAL THERMODYNAMICS. 4 HOURS. Introduction to statistical mechanics and application to equilibrium thermodynamics. Prerequisite: Chem 344.

350. BIOCHEMISTRY I. 4 HOURS. Same as Biological Sciences 370. Chemistry of biological systems, including proteins and enzymes. Prerequisites: Chem 119 or 121 and credit or registration in Chem 235.

351. BIOCHEMISTRY II. 4 HOURS. Same as Biological Sciences 371. Continues Chemistry 350. Carbohydrate and lipid metabolism. Electron transport. Prerequisite: Chem 350.

352. BIOCHEMISTRY III. 4 HOURS. Same as Biological Sciences 372. Continues Chemistry 351. Metabolism of amino acids, nucleic acids, and proteins; the biosynthesis of biological macromolecules. Prerequisite: Chem 351.

353. CHEMICAL BIOGENESIS. 4 HOURS. Same as Biological Sciences 353. Biosynthesis of important biological compounds. Prerequisite: Chem 235.

355. BIOCHEMISTRY LABORATORY I. 2 HOURS. Introduction to experimentation with biochemical systems, processes, and compounds of biochemical importance. Prerequisites: Chem 121 and registration in Chem 350.

357. BIOCHEMISTRY LABORATORY II. 2 HOURS. Continues Chemistry 355. Prerequisites: Chem 355 and registration in Chem 351.

361. ADVANCED ORGANIC CHEMISTRY I. 4 HOURS. A physical-organic approach to organic reactions; particular emphasis on reaction mechanisms and the relationship between reactivity and structure. Lectures and assigned readings. Prerequisite: Chem 235.

362. ADVANCED ORGANIC CHEMISTRY II. 4 HOURS. Continues Chemistry 361. Lectures and assigned readings. Prerequisite: Chem 361.

380. PRINCIPLES OF PHYSICAL CHEMISTRY I. 4 HOURS. Credit is not given for both the Chemistry 380, 382 sequence and the 340, 342, 344 sequence. Chemistry 380 and 382 provide an elementary introduction to physical chemistry; particular emphasis on topics of importance in the biological and health sciences. Prerequisites: Chem 119 or 121, Math 131, and two terms of physics or consent of the instructor.

382. PRINCIPLES OF PHYSICAL CHEMISTRY II. 4 HOURS. Continues Chemistry 380. Prerequisite: Chem 380.

383. ELEMENTARY PHYSICAL CHEMISTRY LABORATORY. 1 HOUR. An introductory course. Prerequisite: Chem 380.

384. SURFACE AND MACROMOLECULAR CHEMISTRY. 4 HOURS. Interfacial phenomena, stability of disperse systems, properties of polymer solutions. Prerequisites: Chem 382 or the equivalent and consent of the instructor.

385. SURFACE AND MACROMOLECULAR LABORATORY. 2 HOURS. Techniques in surface and macromolecular chemistry. Prerequisites: Credit or registration in Chem 384.

392. INDEPENDENT STUDY. 1 TO 4 HOURS. May be repeated for credit. Individual study, under the close supervision of a faculty member, in areas not covered in standard courses. Credit is contingent on the submission of a written report to both the supervisor for approval and the Department of Chemistry for information. A maximum of Chemistry 392 and 399 combined may be credited toward department undergraduate degree requirements. Prerequisites: Approval of the department and consent of the instructor.

393. TOPICS IN MODERN CHEMISTRY. 2 TO 4 HOURS. Lectures, demonstrations, and discussions in specialized areas, including analytical, inorganic, organic, and physical chemistry and biochemistry. Prerequisite: Consent of the instructor.

399. INDEPENDENT RESEARCH. 3 HOURS OR MORE. May be repeated for credit. Individual research performed under the close supervision of a faculty member. Credit is contingent on the submission of a written report to both the supervisor for approval and the Department of Chemistry for information. A maximum of 8 hours of Chemistry 392 and 399 combined may be credited toward department undergraduate degree course requirements. While research experience is strongly encouraged for career students, the department does not include this course in computing the grade point average for admission of graduate students. Prerequisites: Approval of the department and consent of the instructor.

Chinese. See Additional Courses.

Classics

John Vaio, PhD, Chairman of the Department.

Professors: Edwin B. Levine, PhD.

Associate Professors: Elizabeth R. Gebhard, PhD; Theodore J. Tracy, PhD; John Vaio, PhD.

Assistant Professors: Susan G. Cole, PhD; James H. Dee, PhD; Matthew W. Dickie, PhD; Alexander P. MacGregor, PhD; John T. Ramsey, PhD; Edward W. Solan, PhD (Visiting).

Instructors: George Hoffman, MA.

Major in Classical Languages and Literature—for the Bachelor of Arts, 36 hours, distributed as follows:

Specialization in Greek
Greek 104, 105, 106, and 24 additional hours in Greek. Greek majors who elect a minor are urged to choose Latin.

Specialization in Latin
36 hours exclusive of Latin 101-106. Latin majors who elect a minor are urged to choose Greek.

Majors in classical languages and literature are urged to take at least 12 hours of ancient history, with concentration on the Greek and Roman periods.

Minor—Students who wish to minor in Greek or Latin must take a total of 32 hours in either, with a minimum of 8 hours in courses at the 200 level or above.

Major in Classical Civilization—for the Bachelor of Arts:

48 hours in Department of Classics classical civilization courses at the 200 level or above, exclusive of Classics 201 and 210.
Up to 12 hours may be chosen from the following related courses in other departments:
History 202, 203, 204, 302, 303, 393
History of Architecture and Art 212, 213, 231, 311
Philosophy 201, 301, 302
Up to 8 hours of the major may be chosen from approved courses in Greek or Latin.

Required Collateral Courses
In addition to these 48 hours, the major requires Greek 101-106 or Latin 101-106 or the equivalent.

Departmental Distinction: Students who complete the major with a grade point average of 4.75 in the upper-division undergraduate courses are recommended for Department Honors with Distinction.

Courses

Classics (Cl)

104. WESTERN LITERATURE OF THE ANCIENT WORLD. 4 HOURS. Same as Humanities 104. Primarily for students not majoring in English or other languages. Selected masterpieces of poetry, drama, and fiction.

150. THE INDIVIDUAL IN PERICLEAN ATHENS. 4 HOURS. Same as Humanities 130. A description of a typical fifth-century BC Athenian; his education, amusements, role in public affairs, moral and religious beliefs, manner of worshipping the gods, and confrontation with great issues.

151. THE INDIVIDUAL IN THE ROMAN REPUBLIC. 4 HOURS. Same as Humanities 131. Introduction to the private life and social institutions of the Roman Republic; special focus on upward mobility as manifested by the typical socially and politically active Roman.

184. GREEK ATHLETICS. 4 HOURS. Survey of ancient athletics and its place in the educational system of the classical world.

201. TERMINOLOGY OF THE HEALTH SCIENCES. 2 HOURS. May be repeated for a maximum of 4 hours. The structure and formation of technical terms based on roots and terms borrowed from Greek and Latin.

202. THE ANCIENT WORLD: GREECE TO THE AGE OF ALEXANDER. 4 HOURS. Same as History 202. From the Neolithic period to the conquest of the Persian empire by Alexander the Great and the creation of the Hellenistic world. Emphasis on political, social, economic, religious, and intellectual development and the contributions of the Greek *polis* to Western civilization. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

203. THE ANCIENT WORLD: THE ROMAN REPUBLIC. 4 HOURS. Same as History 203. Rome from its origins to the collapse of the Roman Republic in the second half of the first century BC. Emphasis on the transformation from a city-state into a world empire and the effects of this change on every phase of Roman life. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

204. THE ANCIENT WORLD: THE ROMAN EMPIRE. 4 HOURS. Same as History 204. Rome from the principate of Augustus to the collapse of the western half of the empire. Emphasis on the political, administrative, social, and economic organization of the empire and the cultural impact and legacy of Roman civilization around the entire Mediterranean basin. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

210. ENGLISH VOCABULARY FROM CLASSICAL ROOTS. 2 HOURS. Survey of the contribution of Latin and Greek to English vocabulary, generally excluding scientific and technical terminology.

248. MYTHOLOGY OF GREECE. 4 HOURS. Same as Humanities 248 and Religious Studies 248. Intensive study of the gods and heroic sagas of the Greeks through original sources in translation.

249. GREEK TRAGIC DRAMA IN TRANSLATION. 4 HOURS. Same as Humanities 249. Knowledge of Greek is not required. The plays of Aeschylus, Sophocles, Euripides. Prerequisite: Junior standing or consent of the instrucotr.

251. GREEK POETRY IN TRANSLATION. 4 HOURS. Same as Humanities 251. Knowledge of Greek is not required. Classical Greek poetry from its beginnings to the Byzantine period.

252. ROMAN SATIRE. 4 HOURS. Same as Humanities 252. Knowledge of Latin is not required. Selections from Horace, Persius, Petronius, Seneca, Martial, and Juvenal.

253. THE INTELLECTUAL DEVELOPMENT OF GREECE. 4 HOURS. Same as Humanities 253 and Religious Studies 253. Knowledge of Greek is not required. Selections from the philosophers, poets, historians, and scientists. Prerequisite: Junior standing.

254. GREEK COMEDY IN TRANSLATION. 4 HOURS. Same as Humanities 254. Knowledge of Greek is not required. The plays of Aristophanes and Menander. Prerequisite: Junior standing or consent of the instructor.

255. ROMAN COMEDY IN TRANSLATION. 4 HOURS. Same as Humanities 255. Knowledge of Latin is not required. The plays of Plautus and Terence. Prerequisite: Junior standing or consent of the instructor.

256. GREEK AND ROMAN EPIC POETRY. 4 HOURS. Same as Humanities 256. Knowledge of Greek and Latin is not required. The epic poems of Homer, Lucretius, Vergil, and others in the Greco-Roman tradition. Prerequisite: Junior standing or consent of the instructor.

257. CLASSICAL GREEK LITERATURE. 4 HOURS. Knowledge of Greek is not required. Same as Humanities 257. Survey of ancient Greek literature with readings from representative classic texts. Prerequisite: Junior standing or approval of the department.

258. CLASSICAL ROMAN LITERATURE. 4 HOURS. Same as Humanities 258. Survey of ancient Roman literature with readings from representative classic texts.

259. CLASSICAL LITERARY CRITICISM. 4 HOURS. Same as Humanities 259. The primary extant sources: Aristotle, *Poetics;* Horace, *Ars Poetica;* Pseudo-Longinus, *On the Sublime;* Quintilian, *Institutio Oratoria.* Knowledge of Greek or Latin is helpful but not essential. Prerequisite: Junior standing.

272. GREEK RELIGION. 4 HOURS. Same as Religious Studies 272. Greek religious practice and thought from Mycenean to Hellenistic times. Prerequisite: Junior standing or consent of the instructor.

279. INTRODUCTION TO CLASSICAL ARCHEOLOGY. 4 HOURS. Materials and forms of classical sites and the cultural remains associated with them; techniques of excavation and recovery. Prerequisite: Junior standing or consent of the instructor.

280. MONUMENTS AND INSTITUTIONS OF ATHENS. 4 HOURS. Same as History 205. The monuments of Athens as they relate to the political and social institutions of the fifth century BC. Prerequisite: Junior standing.

281. MONUMENTS AND INSTITUTIONS OF ROME. 4 HOURS. Same as Humanities 281. The political and social institutions of Rome as they relate to the major monuments during the first two centuries of the empire.

282. ROMAN RELIGION. 4 HOURS. Same as Humanities 282 and Religious Studies 282. Beliefs, practices, and institutions of Roman religion and cults from the early republic to AD 476. Prerequisite: Junior standing or consent of the instructor.

290. URBAN CRISES: ATHENS AND ROME. 4 HOURS. The response of two centers of antiquity to the problems and challenges of metropolitan communities. Ancient theories and texts on urban development. Prerequisite: Junior standing.

299. INDEPENDENT READING. SPECIAL TOPICS IN CLASSICS IN TRANSLATION. 4 HOURS. May be repeated for credit. Individual study under faculty direction. Papers on chosen topics for qualified students based on preparation and interest; students must confer with faculty on papers. Prerequisite: Approval of the department.

348. MYTHOLOGY IN ROME. 4 HOURS. Same as Religious Studies 300. The conscious assimilation and adaptation of Greek mythology in Rome; investigation of the concept of mythology. Prerequisite: Cl 248.

349. CLASSICAL RHETORICAL TRADITION. 4 HOURS. Development from the beginnings in ancient Greece to the Renaissance. Major emphasis on the rhetorical works of Plato, Aristotle, Cicero, and Quintilian. Prerequisites: Junior standing and consent of the instructor.

350. AESCHYLUS AND SOPHOCLES. 4 HOURS. Knowledge of Greek is not required. Close reading of all the plays of Aeschylus and Sophocles in translation; discussion of literary, moral, religious, political, and mythical issues and ideas. Prerequisite: Cl 249 or consent of the instructor.

351. EURIPIDES. 4 HOURS. Knowledge of Greek is not required. Close study of the works of Euripides, the environment in which they were created, and their influence on later European drama. Prerequisite: Cl 249 or consent of the instructor.

370. PLATO: *DIALOGUES*. 4 HOURS. The middle and later *Dialogues* in their fourth-century BC context.

393. TRANSLATION: THEORY AND PRACTICE. 4 HOURS. A reading knowledge of Greek or Latin is expected. Introduction to classical and post-Renaissance concepts of fidelity and creativity; a practicum devoted to authors previously emphasized in the student's curriculum. Prerequisite: Consent of the instructor.

398. TOPICS IN CLASSICAL CIVILIZATION. 4 HOURS. Knowledge of Greek or Latin is not required. Significant themes and topics in classical literature and society. Topics vary. Prerequisite: Two courses in classics at the 200 level, excluding Cl 201, or consent of the instructor.

Greek (Gr)

100. CLASSICAL GREEK. 4 HOURS. Not open to majors in Greek. Intensive introductory course. Rapid introduction to the language of Homer and Plato. Designed for students who wish sufficient training to begin reading on their own.

101. ELEMENTARY GREEK I. 4 HOURS. The fundamentals of ancient classical Greek, including the reading of simple prose. Eligibility will be tested during the first meeting.

102. ELEMENTARY GREEK II. 4 HOURS. Continues Greek 101. Grammar and reading. Prerequisite: Gr 101 or the equivalent.

103. ELEMENTARY GREEK III. 4 HOURS. Continues Greek 102. Prerequisite: Gr 102 or the equivalent.

104. INTERMEDIATE GREEK I. 4 HOURS. Introduction to epic poetry. Selections from Homer. Prerequisite: Gr 103 or the equivalent.

105. INTERMEDIATE GREEK II. 4 HOURS. Introduction to dramatic poetry. Prerequisite: Gr 104 or the equivalent.

106. INTERMEDIATE GREEK III. 4 HOURS. Introduction to philosophic prose; Plato's *Socratic Dialogues*. Prerequisite: Gr 105 or the equivalent.

201. XENOPHON: *HELLENICA*, BOOKS I AND II. 4 HOURS. Reading and translation. Prerequisite: Gr 106 or the equivalent.

202. PLATO: *SOCRATIC DIALOGUES*. 4 HOURS. Reading and translation of at least two of the following: *Apology, Crito, Charmides, Laches, Euthyphro, Hippias Minor, Ion*. Prerequisite: Gr 106 or the equivalent.

203. ATTIC ORATORS. 4 HOURS. Reading and translation of selected orations by one or more of the Attic orators. Prerequisite: Gr 106 or the equivalent.

205. HOMER: *ODYSSEY*. 4 HOURS. Reading and translation of selections. Prerequisite: Gr 106 or the equivalent.

210. GREEK LYRIC POETRY. 4 HOURS. Reading and translation of selections from the lyric poets. Prerequisite: Gr 106 or the equivalent.

211. PROSE COMPOSITION. 4 HOURS. Extensive practice in translation from English to Greek; review of grammar and forms. Prerequisite: Gr 106 or the equivalent.

215. AESCHYLUS: TRAGEDIES. 4 HOURS. Reading and translation of one or more of the tragedies of Aeschylus. Prerequisite: Gr 106.

220. SOPHOCLES: TRAGEDIES. 4 HOURS. Reading and translation of one or more of the tragedies of Sophocles. Prerequisite: Gr 106 or the equivalent.

225. EURIPIDES: TRAGEDIES. 4 HOURS. Reading and translation of one or more of the tragedies of Euripides. Prerequisite: Gr 106 or the equivalent.

275. HERODOTUS: HISTORIES. 4 HOURS. Reading and translation of portions of several of the books. Prerequisite: Gr 106.

281. COMPARATIVE GRAMMAR OF GREEK AND LATIN. 4 HOURS. Same as Latin 281. Required of all students planning to do graduate work in classics. Comparative study of the sounds, inflections, word formation, and syntax of Greek and Latin. Prerequisites: Gr. 103 and Lat 103 or the equivalents.

299. INDEPENDENT READING. 4 HOURS. Individual study under faculty direction. For students qualified by preparation and interest. Prerequisite: Gr 201 or the equivalent.

305. HOMER: *ILIAD*. 4 HOURS. Reading and translation of extensive selections from the poem. Introduction to Homeric scholarship. Prerequisite: 8 hours of classical Greek at the 200 level or the equivalent.

310. PINDAR. 4 HOURS. Reading and analysis of selected *Odes*. Prerequisite: 8 hours of classical Greek at the 200 level or the equivalent.

315. AESCHYLUS: *AGAMEMNON*. 4 HOURS. Reading and analysis of the play; discussion of the use of myth. Prerequisite: 8 hours of classical Greek at the 200 level or the equivalent.

329. GREEK SCIENCE. 4 HOURS. Individual conferences on assigned papers are required. Primarily for Greek majors. Examination and interpretation of selected texts illustrative of the classical development of Greek science from 500 BC. Prerequisite: Any 200-level course in classical Greek.

330. ARISTOPHANES. 4 HOURS. Reading and translation of at least two plays. Prerequisite: 8 hours of classical Greek at the 200 level or the equivalent.

340. DEMOSTHENES. 4 HOURS. Reading and analysis of two or more speeches; study of their historical background. Prerequisite: 8 hours of classical Greek at the 200 level or the equivalent.

350. PLUTARCH. 4 HOURS. Reading and interpretation of one or more of the *Moral Essays* or the *Lives*. Prerequisite: 8 hours of classical Greek at the 200 level or the equivalent.

360. PLATO: *THE REPUBLIC*. 4 HOURS. Reading and interpretation of selections; analysis of style and thought and of the development of some of the major arguments. Prerequisite: 8 hours of classical Greek at the 200 level or the equivalent.

365. ARISTOTLE: *NICOMACHEAN ETHICS*. 4 HOURS. Same as Religious Studies 365. Reading and analysis of selections from several books. Sources and problems of Aristotle's ethical writings. Prerequisite: 8 hours of classical Greek at the 200 level or the equivalent.

370. THUCYDIDES. 4 HOURS. Reading and translation of selections from Thucydides' history of the Peloponnesian War. Sources and problems of Greek historiography. Prerequisite: 8 hours of classical Greek at the 200 level or the equivalent.

380. HELLENISTIC POETRY. 4 HOURS. Reading and analysis of selections dating from 350 BC to AD 350. Prerequisite: 8 hours of classical Greek at the 200 level or the equivalent.

381. GREEK LITERARY CRITICISM. 4 HOURS. Reading and translation of Aristotle's *Poetics* and selections from Longinus' *On the Sublime*. Prerequisite: 8 hours of classical Greek at the 200 level or the equivalent.

382. GREEK RHETORIC. 4 HOURS. Selected texts illustrative of the Greek contribution to the art of rhetoric; special attention to the *Rhetoric* of Aristotle. Prerequisite: 8 hours of classical Greek at the 200 level or the equivalent.

399. INDEPENDENT READING. 1 TO 4 HOURS. May be repeated for credit. For Greek majors and graduate students. Independent study under faculty direction. Prerequisite: 8 hours of classical Greek at the 200 level or the equivalent.

Latin (Lat)

101. ELEMENTARY LATIN I. 4 HOURS. One additional half hour per week in the language laboratory. For students who have no credit in Latin. Grammar and reading.

102. ELEMENTARY LATIN II. 4 HOURS. One additional half hour per week in the language laboratory. Continues Latin 101. Grammar and reading of easy prose and poetry. Prerequisite: Lat 101 or the equivalent.

103. ELEMENTARY LATIN III. 4 HOURS. One additional half hour per week in the language laboratory. Review of grammar; reading of prose. Prerequisite: Lat 102 or two years of high school Latin.

104. INTERMEDIATE LATIN I. 4 HOURS. One additional half hour per week in the language laboratory. Selected readings in prose and poetry. Review of forms and grammar. Prerequisite: Lat 103 or two years of high school Latin.

105. INTERMEDIATE LATIN II. 4 HOURS. One additional half hour per week in the language laboratory. Continues Latin 104. Prerequisite: Lat 104 or the equivalent.

106. INTERMEDIATE LATIN III. 4 HOURS. One additional half hour per week in the language laboratory. Continues Latin 105. Placement by proficiency test. Prerequisite: Lat 105 or the equivalent.

109. HONORS COURSE I. 4 HOURS. *Note:* Students must have credit in Latin 110 and 111 to receive credit in 109. Rapid reading of Latin prose. Prerequisite: Three or four years of high school Latin with a B average or better or Lat 106 or advanced placement by examination or consent of the instructor.

110. HONORS COURSE II. 4 HOURS. *Note:* Students must have credit in Latin 109 and 111 to receive credit in 110. Rapid reading of Latin poetry. Prerequisite: Three or four years of high school Latin with a B average or better or Lat 109 or advanced placement by examination or consent of the instructor.

111. HONORS COURSE III. 4 HOURS. *Note:* Students must have credit in Latin 109 and 110 to receive credit in 111. Individual assignments at the discretion of the instructor. Rapid reading of Latin prose and poetry. Prerequisite: Three or four years of high school Latin with a B average or better or Lat 110 or advanced placement by examination or consent of the instructor.

201. SURVEY OF LATIN LITERATURE I. 4 HOURS. *Note:* Students must have credit in Latin 202 and 203 to receive credit in 201. Writings of the early period. Prerequisite: Lat 106 or the equivalent.

202. SURVEY OF LATIN LITERATURE II. 4 HOURS. *Note:* Students must have credit in Latin 201 and 203 to receive credit in 202. Writings of the middle period. Prerequisite: Lat 201.

203. SURVEY OF LATIN LITERATURE III. 4 HOURS. *Note:* Students must have credit in Latin 201 and 202 to receive credit in 203. Writings of the late period. Prerequisite: Lat 202.

204. CATULLUS: *CARMINA*. 4 HOURS. All the poems of Catullus, with special attention to the lyrics. Prerequisite: Lat 106 or the equivalent.

205. PLINY THE YOUNGER: *EPISTULAE.* 4 HOURS. Selections from the correspondence. Prerequisite: Lat 106 or the equivalent.

206. CICERO: PHILOSOPHIC ESSAYS I. 4 HOURS. Selections from *De Amicitia, De Senectute, Tusculanae Disputations, De Officiis.* Prerequisite: Lat 106 or the equivalent.

207. TERENCE: *FABULAE.* 4 HOURS. Selections from two or more plays. Prerequisite: Lat 106 or the equivalent.

208. CICERO: ORATIONS. 4 HOURS. Introduction to Cicero as an orator and a statesman through the reading of selections from his orations. Prerequisite: Lat 106 or the equivalent.

209. VERGIL: *AENEID.* 4 HOURS. Reading of selections. Prerequisite: Lat 106 or the equivalent.

210. PLAUTUS I. 4 HOURS. Introduction to Roman comedy; reading of at least one of the following plays in Latin: *Captives, The Brothers Menaechmus, The Braggart Soldier.* Prerequisite: Lat 106 or the equivalent.

211. PROSE COMPOSITION. 4 HOURS. Extensive translation from English to Latin; review of grammar and forms. Prerequisite: Lat 106 or the equivalent.

251. OVID: *METAMORPHOSES,* SELECTIONS. 4 HOURS. Reading and translation of selected books and myths from the *Metamorphoses.* Prerequisite: Lat 106 or the equivalent.

252. LIVY: *AB URBE CONDITA,* SELECTIONS. 4 HOURS. Reading and translation of selected books from Livy's *History of Rome.* Prerequisite: Lat 106 or the equivalent.

260. HORACE: *ODES* I. 4 HOURS. Reading of a substantial portion of the *Odes.* Prerequisite: Lat 106 or the equivalent.

261. HORACE: *SATIRES.* 4 HOURS. Reading of the *Satires.* Prerequisite: Lat 106 or the equivalent.

270. TACITUS: MINOR WORKS. 4 HOURS. Introduction to Tacitus; reading of selections from the *Dialogus, Agricola,* and *Germania.* Prerequisite: Lat 106 or the equivalent.

281. COMPARATIVE GRAMMAR OF GREEK AND LATIN. 4 HOURS. Same as Greek 281. Required of all students planning to do graduate work in classics. Comparative study of the sounds, inflections, word-formation, and syntax of Greek and Latin. Prerequisites: Gr 103 and Lat 103 or the equivalents.

299. INDEPENDENT STUDY. 4 HOURS. Individual study under faculty direction. For students qualified by preparation and interest. Prerequisite: Lat 201 or the equivalent.

301. *CORPUS CAESARIANUM.* 4 HOURS. For advanced undergraduates, graduates, secondary school teachers of Latin, and prospective teachers. Rapid reading of Latin prose, based on the *Corpus Caesarianum;* discussion of the linguistic, literary, social, and political aspects that contribute to the understanding of the texts. Prerequisites: Junior standing in Latin and at least one year of Latin beyond Lat 106.

302. TIBULLUS AND PROPERTIUS. 4 HOURS. Reading and interpretation of selections from their chief elegiac poems. Prerequisite: 4 hours of Latin at the 200 level or the equivalent.

304. SENECA: PROSE WORKS. 4 HOURS. Reading of two or more of the *Moral Essays* and/or a selection of the *Letters*. Prerequisite: 4 hours of Latin at the 200 level or the equivalent.

305. SENECA: TRAGEDIES. 4 HOURS. Reading and interpretation of one or more of the tragedies. Prerequisite: 4 hours of Latin at the 200 level or the equivalent.

306. CICERO: PHILOSOPHIC ESSAYS II. 4 HOURS. Reading ot two or more books from among *De Finibus, De Natura Deorum, De Divinatione, Academici;* study of related problems. Prerequisite: One 200-level course in Latin or the equivalent.

308. CICERO: LETTERS. 4 HOURS. Reading and translation of selections of the *Letters to Atticus* and the *Letters to His Friends*. Prerequisite: 8 hours of Latin at the 200 level or the equivalent.

309. VERGIL: *ECOLOGUES* AND *GEORGICS*. 4 HOURS. Reading and analysis of selections from Vergil's earlier works. Prerequisite: 8 hours of Latin at the 200 level.

310. PLAUTUS II. 4 HOURS. Advanced studies in Roman comedy and the reading of two or more plays not read in Latin 210. Prerequisite: At least 8 hours of Latin at the 200 level or the equivalent.

340. LUCRETIUS. 4 HOURS. Reading and interpretation of extensive selections from *De Rerum Natura*. Prerequisite: 4 hours of Latin at the 200 level or the equivalent.

348. ST. AUGUSTINE: *THE CONFESSIONS*. 4 HOURS. Same as Religious Studies 348. The autobiographical portions of *The Confessions*. Prerequisite: One 200-level course in Latin.

350. MEDIEVAL LATIN. 4 HOURS. Literary and linguistic study of Latin texts originating between 350 and 1350. Prerequisites: Lat 106 and 203 or the equivalent.

351. OVID: ELEGIAC POETRY. 4 HOURS. Reading and analysis of the chief elegiac poems. Prerequisite: 4 hours of Latin at the 200 level or the equivalent.

360. HORACE: *ODES* II AND *EPODES*. 4 HOURS. More extensive study of the *Odes*, with the addition of the *Epodes*. Prerequisite: One 200-level course in Latin.

361. HORACE: *EPISTLES*. 4 HOURS. Reading and interpretation of the *Epistles*. Prerequisite: 8 hours of Latin at the 200 level or the equivalent.

362. JUVENAL: *SATURAE*. 4 HOURS. Selections from the sixteen extant satires. Prerequisite: 8 hours of Latin at the 200 level or the equivalent.

370. TACITUS: *ANNALS* AND *HISTORIES*. 4 HOURS. Intensive study of the early empire and the historiography of Tacitus; extensive reading in the works. Prerequisite: At least 8 hours of Latin at the 200 level or the equivalent.

381. ROMAN LITERARY CRITICISM. 4 HOURS. The principal contributions of Latin writers to the study of literature. Prerequisite: At least 12 hours of Latin at the 200 level or the equivalent.

382. ROMAN RHETORIC. 4 HOURS. The contributions of writers in Latin to the study and practice of rhetoric. Prerequisite: At least 12 hours of Latin or the equivalent.

384. ROMAN SATIRE. 4 HOURS. Study of the definition, development, and problems of the genre through selections from the principal writers of satire. Prerequisite: 8 hours of Latin at the 200 level or the equivalent.

390. THE TEACHING OF LATIN IN THE SECONDARY SCHOOL. 4 HOURS. Theory and practice in foreign language instruction as they apply specifically to teaching Latin at the secondary level; objectives of instruction, historical perspectives, texts, and materials of instruction; preprofessional orientation. Prerequisite: At least 8 hours of Latin at the 300 level or approval of the department.

Composition. See English.

Criminal Justice

Professors: James W. Osterburg, MPA, Head of the Department; James T. Carey, PhD; Hans W. Mattick, MA; Joseph D. Nicol, MS.

Associate Professors: Bernard Dolnick, MBA; Sidney Hyman, MA; Michael D. Maltz, PhD (Visiting); Patrick D. McAnany, JD; Stephen A. Schiller, JD; Jack B. Schmetterer, JD (Visiting); John A. Webster, DCrim.

Assistant Professors: Sidney F. Bosen, PhD; Paul Bradley, JD (Visiting); R. Michael Buren, PhD; Nathan T. Clark, MA; Shari S. Diamond, PhD; Frank S. Merritt, JD (Visiting); Frank T. Morn, MA (Visiting); Thomas J. Pavlak, PhD; Sanford M. Sherizen, PhD; Larry L. Tifft, PhD.

Instructors: Steven M. Balkin, MA (Visiting); Jerome Neapolitan, MA (Visiting).

Lecturers: Broderick E. Reischl, MSW.

The curriculum is designed for students who are planning a career or graduate study in law enforcement, police administration, criminal law, corrections, probation and parole, criminology, or criminalistics.

The Bachelor of Arts is awarded to students who fulfill the general University and the College of Liberal Arts and Sciences graduation requirements and who successfully complete the curriculum in criminal justice.

Major—44 hours, distributed as follows:
Criminal Justice 101, 102, 205, 206, 230, 351, 352
16 hours of criminal justice courses at the 200 or 300 level

Required Prerequisite and Collateral Courses—28 hours, distributed as follows:
Sociology 100
24 hours of collateral courses at the 200 level or above and approved by a department adviser. Approved collateral courses may be selected from any de-

partment or program in the University; however, those taken outside the College of Liberal Arts and Sciences are subject to the college rule, which states the maximum number of hours that can be taken outside the college and counted toward a degree.

Departmental Distinction: A candidate must be eligible for College Honors, have completed 24 of the 32 hours of collateral courses at Chicago Circle, have a grade point average of 4.25 in all criminal justice major courses, including collateral and transfer criminal justice work.

Departmental High Distinction: A candidate must meet the Departmental Distinction requirements with a 4.50 grade point average and present before the criminal justice faculty a paper written for Criminal Justice 399, taken prior to the last term before graduation.

Minor—A student who wishes to minor in criminal justice must complete the following courses:
Criminal Justice 101, 102, 351, and 352.
8 hours of criminal justice at the 200 or 300 level, chosen with the consent of the adviser.

Bachelor of Science in Criminalistics

The program is intended for students planning advanced study in criminalistics or a career in federal, state, or local regulatory or crime laboratories. The Bachelor of Science is awarded to students who fulfill the general University and the College of Liberal Arts and Sciences graduation requirements[1] and complete the criminalistics curriculum.

Major—48 hours, distributed as follows:
Criminal Justice 101, 205, 210, 211, 212, 259, 313, 314, 315, 351, and 352

Prerequisite and Collateral Courses—56 hours, in specified courses in chemistry, physics, sociology, and psychology
Chemistry 112, 113, 114, 121, 232, 233, 234, 235, 236
Sociology 100 and 230 (or Criminal Justice 230)
Physics 101 and 102
Psychology 100

Courses (CrJ)

101. ADMINISTRATION OF CRIMINAL JUSTICE. 4 HOURS. The development and contemporary operation of the agencies of criminal justice, from police procedures through the prosecution and judiciary to correctional institutions, including probation and parole. Emphasis on current philosophies and practices.

102. FOUNDATIONS OF CRIMINAL JUSTICE. 4 HOURS. The development of law as a means of social control from earliest records through Hammurabi, the Greek and Roman civilizations, European cultures, Anglo-Saxon Britain, and the common law to the present constitutional, statutory, and case law controls in the United States.

1. A student who majors in criminalistics is considered to have completed the 12-hour course distribution requirement in social sciences and the 20-hour requirement in natural sciences.

103. THE DEVELOPMENT OF POLICE SYSTEMS IN SOCIETY. 4 HOURS. Historical development of law enforcement from earliest beginnings through Anglo-Saxon England to the present systems and operations. Comparative study of the theories and operations of police systems throughout the world. The structure and interrelationships of American police agencies on the federal, state, county, and municipal levels.

205. RESEARCH METHODOLOGY IN CRIMINAL JUSTICE I. 4 HOURS. Introduction to research in criminal justice. Research papers illustrating important areas of interest are analyzed. Prerequisites: CrJ 101, 102 and consent of the instructor.

206. RESEARCH METHODOLOGY IN CRIMINAL JUSTICE II. 4 HOURS. Continues Criminal Justice 205. Emphasis on practical problems associated with the analyses of experimental data. Laboratory practice in data analysis. Prerequisites: CrJ 205 and consent of the instructor.

210. CRIMINALISTICS. 4 HOURS. Operations undertaken in a crime laboratory to examine and evaluate evidence in criminal and civil investigations; firearms and tool identification, drug and narcotics analyses, serology, microscopy of trace materials, and forensic instruments. Prerequisite: CrJ 259 or consent of the instructor.

211. INTRODUCTORY CRIMINALISTICS ANALYSIS LABORATORY. 5 HOURS. Introduction to laboratory analysis as applied to basic concepts of identification and individualization of common frequently occurring physical evidence materials. Criteria for the opinion formulation process. Prerequisites: Chem 121, 134, Phys 102, and CrJ 210 or consent of the instructor.

212. FORENSIC SCIENCE. 4 HOURS. Introduction to pathology, toxicology, criminal psychology, detection of deception, and document examination; role of the sciences in the administration of criminal justice; current approaches to the identification of criminal homicide. Prerequisite: CrJ 210 or consent of the instructor.

220. INFORMATION AND COMMUNICATION SYSTEMS. 4 HOURS. Review of the available technology; assessment of the introduction and application of scientific "hardware" and "software" to the administration of criminal justice at all levels. Historical development of communication and information systems in law enforcement. Prerequisite: CrJ 258 or consent of the instructor.

230. SOCIOLOGY OF DEVIANCE. 4 HOURS. Same as Sociology 230. Deviant behavior and the various theoretical orientations advanced to explain it. Prerequisite: Soc 100.

231. CRIMINOLOGY. 4 HOURS. Same as Sociology 231. The nature and extent of crime in American society; assessment and evaluation of the various measures proposed for the control of criminal behavior. Prerequisite: CrJ 230.

232. JUVENILE DELINQUENCY. 4 HOURS. Same as Sociology 232. Various conceptions of the nature of juvenile delinquency and its causes; the juvenile-court movement; juvenile detention, treatment of juvenile offenders; delinquency control programs. Prerequisite: CrJ 230.

258. POLICE ADMINISTRATION. 4 HOURS. The principles of administration and management in their application to law enforcement; the police organizational structure. Responsibilities and interrelationships of administrative

and line-and-staff services. Analysis of the functional divisions of a modern police operation in its application to public safety needs of the community. Prerequisites: CrJ 101 and 102 or consent of the instructor.

259. PRINCIPLES OF CRIMINAL INVESTIGATION. 4 HOURS. Theory and practice of investigation; the possible applications of the philosophical principles of deductive and inductive reasoning to criminal investigation. The scientific fact-finding approach in the development of factual data from persons and things. The development and practice of criminal investigation in the field of law enforcement. Prerequisite: CrJ 101 or consent of the instructor.

280. THEORIES OF SANCTIONS, DETERRENTS, AND REHABILITATION. 4 HOURS. Analytical examination of the historical philosophies and practices of sanctions for criminal acts. Evaluation of modern approaches to the disposition of offenders, including sentencing, capital punishment, incarceration, fines, and rehabilitation programs. Prerequisite: Junior standing or consent of the instructor.

313. ADVANCED CRIMINALISTICS ANALYSIS LABORATORY. 5 HOURS. Continues Criminal Justice 211. More advanced concepts of identification and individualization, including the examination of less frequently encountered physical evidence materials and empirical data requirements for interpretation of examinations. Prerequisites: CrJ 210 and 211 or consent of the instructor.

314. APPLIED ANALYTICAL CHEMISTRY I. 5 HOURS. Same as Chemistry 327. Theory and procedures of separation, purification, and identification of components of industrial and forensic interest. Prerequisites: Chem 121, 235 or CrJ 313 or consent of the instructor.

315. APPLIED ANALYTICAL CHEMISTRY II. 5 HOURS. Same as Chemistry 328. Advanced instrumental analytical procedures applied to substances of industrial and forensic interest. Prerequisite: CrJ 314 or consent of the instructor.

330. COMPLEX ORGANIZATIONS IN THE CRIMINAL JUSTICE SYSTEM. 4 HOURS. Exploration and analysis. Police department, courts, and prison structure in context and mutual permeability with their environments. Special attention to research questions. Prerequisite: Junior standing or consent of the instructor.

333. SOCIOLOGY OF LAW. 4 HOURS. Same as Sociology 333. The origin and development of legal norms in various social settings; their relationship to custom and incorporation in legal and quasi-legal institutions; special attention to the difference between legal and sociological reasoning; law as an instrument of social change. Prerequisites: CrJ 206, 230, or Soc 201, 202, 230, or consent of the instructor.

335. ORGANIZED CRIME IN THE UNITED STATES. 4 HOURS. The development of organized crime throughout history; detailed consideration of the political, social, and economic conditions involved in the appearance, spread, and expansion of organized crime in America. Prerequisites: CrJ 101, 102, and 230 or consent of the instructor.

338. BASIC FORENSIC ANTHROPOLOGY. 4 HOURS. Same as Anthropology 338. Anthropological methods and techniques used to identify and interpret human remains in paleontology, archeology, and criminal insurance and mass disaster investigations. Prerequisites: Junior standing and 8 hours of either anthropology or criminal justice; Anth 231 or consent of the instructor.

339. INSTITUTIONAL TREATMENT OF OFFENDERS. 4 HOURS. The role of custodial and correctional institutions in the treatment of the offender; philosophy of administration and management of the institutions; survey of historical development and current trends in jails and prisons. Prerequisites: CrJ 101 and 102 or consent of the instructor.

340. CRIMINAL SELF AND CRIMINAL CAREERS. 4 HOURS. The development of criminal self-conceptions; social-psychological processes of group alienation; development of commitment and professionalization in the development of criminal careers. Selected case studies. Prerequisites: Soc 100 and CrJ 231 or consent of the instructor.

343. COMPARATIVE ALTERNATIVES TO IMPRISONMENT. 4 HOURS. Survey of alternatives to imprisonment found in East and West Europe. After examination of these alternatives by means of legal, sociological, and correctional theories, models for noncustodial programs are developed for possible application to the American criminal justice system. Prerequisites: CrJ 101, upper-division standing or consent of the instructor.

345. COMMUNITY TREATMENT OF OFFENDERS. 4 HOURS. The history and development of programs relating to community treatment of offenders; the philosophies and programs dealing with the rehabilitation and reintegration of the offender into society. Prerequisites: CrJ 101, 102, Soc 225, 276; or consent of the instructor.

350. THE ROLE OF LAW ENFORCEMENT IN COMMUNITY RELATIONS. 4 HOURS. Analysis of the relationship between law enforcement and the social structure of the community; the significant problem areas involving minority elements, cultural and ethnic groups, power and social-elite and political and social-action movements. Prerequisites: CrJ 101, 102, Soc 225 or 276; or consent of the instructor.

351. CRIMINAL LAW I: SUBSTANTIVE CRIMINAL LAW. 4 HOURS. Required in the criminal justice curriculum; cannot be substituted for a criminal law course taken by law students. General doctrines of criminal liability in the United States; classification of crimes as against persons, property, and the public welfare. Emphasis on the concept of governmental sanctions of the conduct of the individual. Prerequisites: CrJ 101, 102, and consent of the instructor.

352. CRIMINAL LAW II: CRIMINAL PROCEDURE. 4 HOURS. Required in the criminal justice curriculum; cannot be substituted for a criminal law course taken by law students. The criminal process. Legal problems associated with the investigation of crime, the acquisition of evidence, the commencement of a criminal proceeding, the prosecution and defense of charges, sentencing and appeal. Principal concern is with the development of existing procedures and examination of current efforts for reform. Prerequisites: CrJ 351 and consent of the instructor.

353. CRIMINAL LAW III: THE INSTRUMENTATION OF CRIMINAL JUSTICE. 4 HOURS. Continues Criminal Justice 352. The agencies that play significant roles in the criminal process. Functions of the law enforcement agency, counsel, and the courts. Particular emphasis on the responsibilities and interrelationships of the agencies examined. Prerequisite: CrJ 352 or consent of the instructor.

354. EVIDENCE. 4 HOURS. The rules of evidence as they apply to judicial proceedings and administrative hearings relative to the criminal process. Devel-

opment of the underlying rationale of the rules. Emphasis on the relationship between methods of evidence collection and admissibility. Prerequisite: CrJ 352 or consent of the instructor.

360. INDUSTRIAL AND COMMERCIAL SECURITY ADMINISTRATION. 4 HOURS. Theories and philosophy of the administration of industrial and commercial security functions; survey of contemporary organization and management of security operations; application of law enforcement principles within private enterprise. Prerequisites: CrJ 101, 258, and 259 or consent of the instructor.

381. HISTORY OF CRIME CONTROL. 4 HOURS. The history of the penitentiary, urban police, private police, state police, and national police. Various types of crime relating to the development of police and penology in their historical context. The rise of casual, professional, and organized crime in the nineteenth and twentieth centuries is emphasized. Prerequisite: Upper-division standing or consent of the instructor.

391. PROSEMINAR ON CRIMINAL JUSTICE. 4 HOURS. Study in depth of current issues, problems, and developments of serious concern within the field of the administration of criminal justice. Prerequisites: Junior standing and CrJ 101, 102 or consent of the instructor.

395. INTERNSHIP. 4 HOURS. Observation of and participation in the daily work of a criminal justice agency. Work is supervised by a faculty member and the management personnel of the agency. Prerequisites: Senior standing and consent of the instructor.

398. THE PROBLEM OF JUSTICE. 4 HOURS. Same as Political Science 398 and Religious Studies 398. The premodern view of justice, such as Plato's or Aristotle's; the modern understanding of justice, such as Hobbes's or Locke's, which is the foundation of the modern political regime; Rousseau's seminal political thought on justice, which is the basic for a variety of reforms and alternatives offered to Hobbes's and/or Locke's political regime. Prerequisite: Two courses in political science, including PolS 150 or 151.

399. INDEPENDENT STUDY. 2 TO 8 HOURS. For criminal justice majors only. Independent study and research, under the direct supervision of a faculty member, on a subject or subjects not covered in the regular curriculum. Prerequisites: Consent of the instructor, obtained by preregistration in the department office; at least five criminal justice courses, including CrJ 101, 102, 205, and 206.

Economics

Professors: George Rosen, PhD, Head of the Department; Antonio Camacho, PhD; William D. Grampp, PhD; Richard F. Kosobud, PhD; Oscar Miller, MA.

Associate Professors: Eliezer B. Ayal, PhD; Gilbert Ghez, PhD; John F. MacDonald, PhD; Joseph Persky, PhD; Houston H. Stokes, PhD.

Assistant Professors: Gilbert W. Bassett, PhD; Carson W. Bays, PhD; H. Woods Bowman, PhD; Frances V. Flanagan, PhD; Winifred B. Geldard, MBA, CPA (Emeritus); Tapan Mitra, PhD; Ronald Moses, PhD; Steven Rock, PhD; Arthur O. Seltzer, MA; Mo-Yin Tam, PhD; William D. White, PhD.

Lecturers: Ali T. Akarca, MA (Visiting); Jose Alberro, MA; Larry Azuse, MBA; Steven Balkin, MA (Visiting); Franklyn Broude, MA; Norman S. Smith, BS.

Major—For the Bachelor of Arts in Liberal Arts and Sciences, 36 hours, distributed as follows:
Economics 120 and 121
Economics 318, 319, and 320 and 16 additional hours at the 300 level *or*
Economics 320 and 321 and 20 additional hours at the 300 level

Required Prerequisite and Collateral Courses—23 hours, distributed as follows:
Mathematics 110, 111, 112
Quantitative Methods 270, 271, 272

Minor—Students from other departments who wish to minor in economics must take at least 20 hours of course work, including: Economics 120 and 121, Economics 318 and 319 *or* Economics 320 and 321, and one additional economics course at the 300 level or above. (If Economics 318 and 319 are taken, Economics 320 may be used as the additional course.)

For a list of economics courses, see the Department of Economics section in the *College of Business Administration.*

English

Professors: Jay A. Levine, PhD, Head of the Department; Paul D. Carroll, MA; John A. Conley, PhD; John E. Hardy, PhD; Daryl Hine, PhD (Visiting); John C. Johnson, PhD; Alexander Karanikas, PhD; Bernard R. Kogan, PhD; Michael J. Lieb, PhD; Robie M. Macauley, MA (Visiting); Louis Marder, PhD; Ralph J. Mills, Jr., PhD; John F. Nims, PhD; Robert B. Ogle, PhD; John B. Shipley, PhD; James B. Stronks, PhD; Mary Thale, PhD; Samuel A. Weiss, PhD; Maurita Willett, PhD; M.L. Wine, PhD.

Associate Professors: Preston M. Browning, Jr., PhD; Mary J. Carruthers, PhD; Beverly Fields, PhD; Gloria G. Fromm, PhD; Moreen C. Jordan, PhD; Howard H. Kerr, PhD; Laurette A. Kirstein, MA; Robert J. Kispert, PhD; Daniel A. Lindley, Jr., PhD; W. Nell Love, PhD; Patricia A. McFate, PhD; John H. Mackin, PhD; John P. McWilliams, PhD; John C. Mellon, EdD; Irving M. Miller, PhD; A. LaVonne Ruoff, PhD; Gene W. Ruoff, PhD; Jaroslav Schejbal, PhD; Gerald C. Sorensen, PhD.

Assistant Professors: Michael A. Anania, BA; Julian W. Breslow, PhD; Nancy R. Cirillo, PhD; William V. Davis, PhD; Roslyn J. Friedman, MS; Judith K. Gardiner, PhD; Willene S. Hardy, PhD; Roger L. Harm, PhD; Eleanor K. Harris, MA; Brian Higgins, PhD; S. Clark Hulse, PhD; Regina M. Janes, PhD; Wayne A. Jones, PhD; George W. Kennedy, PhD; Julia Lesage, PhD; Sheldon W. Liebman, PhD; Delores Lipscomb, MA; Robert Mahony, PhD; David D. Marcus, PhD; Jane Marcus, PhD (Visiting); Leah S. Marcus, PhD; Kenneth M. Mason, Jr., PhD; Carl A. Rapp, PhD; Joan G. Reiter, PhD; Margret Schaefer, PhD; John S. Scott, PhD; Hopewell R. Selby, PhD; James P. Sloan, BA; Frederick C. Stern, PhD; William H. Sullivan, PhD; Samuel S. Westgate, PhD; Eugene Wildman, MA; Judith F. Wynne, EdD.

Instructors: F. Gaylord Cox, MA; Russell E. Davis, MA; Louise Glickman, MA; Arthur L. Greenwald, MA; Philip G. Heim, MA; Dolores L. Keranen, MA; Amy H. Lindley, MAT; Anne Phillips, MA; Mary C. Sidney, MA; Edwin Yontef, MA.

Lecturers: Dace I. Baumanis, MA; Karen Corsey, MA; Donald F. Homier, PhD; Ruta M. Juska, MA; Deborah Kaplan, MA (Visiting); Matthew W. Little, MA (Visiting); Errol M. McGuire, MA; Christina H. Mahony, MA (Visiting); Joel J. Mambretti, MA (Visiting); Edward J. O'Shea, MA (Visiting); Philip R. Rider, MA (Visiting); Barry M. Schneider, MA (Visiting); Joanne F. Seiser, MA; Barbara J. Skladanek, MA (Visiting); Patricia M. Stahl, MA; Karin M. Strand, MA (Visiting); Lisbet O. Temple, MA (Visiting); Virginia W. Wexman, MA.

Major—for the Bachelor of Arts, 48 hours exclusive of 100-level courses, in either Option I *or* Option II. All English majors are required to complete one of the following sequences before undertaking more advanced work: English 150, 151, 152 (in sequence) *or* English 160, 161, 162. This requirement also applies to transfer students who have not had equivalent courses. Majors in teacher education in English are strongly urged to take English 160, 161, 162. Courses in English at the 100 level do not count toward the major in English or in teacher education. Each major is assigned a department adviser.

Option I. Recommended for students planning to do graduate work in English or American literature.

Required Courses	*Hours*
English 313 or 314, Shakespeare I or II	4
English 240, Introduction to Techniques of Literary Criticism and Scholarship	4
English 260, 261, Survey of American Literature I, II	8
English literature: one 200- or 300-level course in each of the following areas:*	
Before 1500	4
Renaissance through Milton (1500-1660)	4
Restoration—18th Century (1660-1789)	4
19th Century (1789-1900)	4

*No more than 8 hours in the area requirements may be satisfied by taking genre courses in the novel or drama, exclusive of Shakespeare.

Electives	
Senior seminar *or* 300-level major-author or studies course	4
Any three 300-level courses offered by the department	12

Option II. Students electing Option II are strongly urged to develop their programs carefully with their advisers.

Required Courses	*Hours*
English 313 or 314, Shakespeare I or II	4
English 240, Introduction to Techniques of Literary Criticism and Scholarship	4
English 260, 261, Survey of American Literature I, II	8

Electives	
Senior seminar or 300-level major-author or studies course	4
Any seven 200- or 300-level courses offered by the department	28

Departmental Distinction: Majors who have been six terms in residence at the University of Illinois at Chicago Circle are eligible for Departmental Distinction. Recommendation is based on either (1) grades of A or B in English 298, a three-term se-

nior honors sequence, provided that the student has also maintained a cumulative grade point average of 4.00 or above in all English, humanities, and composition courses taken with the department, or (2) a cumulative grade point average of 4.50 or above in all English, humanities, and composition courses taken with the department. Senior honors seminars are open to students of superior ability and achievement. Admission is by application to and approval of the department.

Freshmen who demonstrate superior scholarship may participate, by invitation, in the freshman honors program.

Minor—Students from other departments who wish to minor in English must take a minimum of 32 hours, at least 12 of which are in 200- or 300-level courses, which should be selected by the student *and* the adviser for the minor.

Among the courses strongly recommended are the following:

English 240

A three-quarter (12-hour) survey of English or American or world literature: English 150, 151, 152 or 260, 261, 262 or Humanities 104, 105, and 106.

Students who have taken one of these sequences to fulfill the College of Liberal Arts and Sciences requirements in the humanities may count these 12 hours toward fulfilling the 32-hour requirement for the minor in English.

The prerequisite for all 300-level courses in the department is 12 hours of English; 150, 151, 152 or 160, 161, 162 are recommended.

Teacher Education in English: Requirements for Teaching in Secondary Schools

All teacher education majors are assigned a department adviser.

Either the sequence English 150, 151, 152 or the sequence 160, 161, 162 is a prerequisite for all English education majors. 160, 161, 162 are strongly recommended.

To be recommended for practice teaching (Education 270, 271) the student must have a cumulative grade point average of 3.75 in English and must obtain the approval of the supervisor of English education. Preference is given to students planning to do their practice teaching in the city, rather than in suburban schools.

In addition to the major described below, the Chicago Board of Education requires the following for prospective teachers of English in the Chicago school system: either two courses in the teaching of reading (such as Education 261 and 265) or one course in the teaching of reading and a course in library science for teachers (such as English 280).

Major—for the Bachelor of Arts, 48 hours, distributed as follows:

Required Courses	*Hours*
Literature	
English 313 or 314, Shakespeare I or II	4
English 240, Introduction to Techniques of Literary Criticism and Scholarship	4
English 260, 261, Survey of American Literature I and II	8
English literature: one 200- or 300-level course in *two* of the following areas: Chaucer or Milton; Restoration—18 Century (1660-1789); 19th Century—World War I	8
Language and Linguistics	
English 300	4
English 205 or 385	4
Teaching of English	
English 381	4
English 386	4

Electives

Senior seminar or a 300-level major-author or studies course	4
One 200- or 300-level course in one of the following areas:	4
Modern British	
Modern American	
World Literature	
Humanities	

Courses

English (Engl)

101. INTRODUCTION TO POETRY. 4 HOURS. Same as Humanities 101. Reading and discussion of representative poems from the ancient world to the present.

102. INTRODUCTION TO DRAMA. 4 HOURS. Same as Humanities 102. Reading and discussion of representative plays from the ancient world to the present.

103. INTRODUCTION TO FICTION. 4 HOURS. Same as Humanities 103. Reading and discussion of representative fiction from the beginnings to the present.

111. FRESHMAN COLLOQUIUM I. 4 HOURS. Reading of major prose writers. Extensive practice in expository writing. Satisfactory completion of English 111 permits waiver of English Composition 101. Prerequisite: ACT English score of 24 or higher or the equivalent.

112. FRESHMAN COLLOQUIUM II. 4 HOURS. Reading of major prose writers. Extensive practice in argumentative and research writing. Satisfactory completion of English 112 permits waiver of English Composition 102. Prerequisite: Engl 111.

113. FRESHMAN COLLOQUIUM III. 4 HOURS. Readings in major literary works representing a variety of forms and areas. Extensive practice in critical writing. Prerequisite: Engl 112.

120. AMERICAN LITERATURE AND AMERICAN CULTURE. 4 HOURS. May not be repeated for credit. Same as Humanities 120. Analysis of interconnections between American literature and American culture. Content varies.

121. MODERN LITERATURE AND MODERN CULTURE. 4 HOURS. May not be repeated for credit. Same as Humanities 121. Analysis of interconnections between modern literature and modern culture. Content varies.

131. INTRODUCTION TO SHAKESPEARE. 4 HOURS. Introductory survey of Shakespeare's plays and poems. Prerequisite: Sophomore standing or exemption from Comp 102.

150. SURVEY OF ENGLISH LITERATURE I: FROM THE BEGINNINGS THROUGH MILTON. 4 HOURS. Note: Either English 150, 151, 152 or English 160, 161, 162 are required for English majors. A chronological survey of major works from about 760 to 1660. Prerequisite: Sophomore standing or exemption from Comp 102 or James Scholar status.

151. SURVEY OF ENGLISH LITERATURE II: FROM DRYDEN THROUGH KEATS. 4 HOURS. A chronological survey of major works from 1660 to 1832. Prerequisite: Engl 150.

152. SURVEY OF ENGLISH LITERATURE III: FROM TENNYSON TO THE PRESENT. 4 HOURS. A chronological survey of major works from 1832 to the present. Prerequisite: Engl 151.

160. ENGLISH AND AMERICAN POETRY. 4 HOURS. Note: Either English 150, 151, 152, or English 160, 161, 162 are required for English majors. Representative selections from a variety of periods and forms. Development of analytical and critical skills. Prerequisite: Sophomore standing or exemption from Comp 102 or James Scholar status.

161. ENGLISH AND AMERICAN DRAMA. 4 HOURS. Representative selections from a variety of periods and forms. Development of analytical and critical skills. Prerequisite: Sophomore standing or exemption from Comp 102 or James Scholar status.

162. ENGLISH AND AMERICAN FICTION. 4 HOURS. Representative selections from a variety of periods and forms. Development of analytical and critical skills. Prerequisite: Sophomore standing or exemption from Comp 102 or James scholar status.

165. INTRODUCTION TO RACIAL AND ETHNIC DIMENSIONS OF AMERICAN LITERATURE. 4 HOURS. Same as Native American Studies 165. Selections from the fiction, drama, poetry, and nonfiction of American racial and ethnic groups.

195. TOPICS IN ENGLISH AND AMERICAN LITERATURE. 4 HOURS. May be repeated for a maximum of 12 hours. Study of a topic, genre, or movement.

198. FRESHMAN HONORS SEMINAR. 4 HOURS. May be repeated for a maximum of 12 hours. Admission is by invitation after screening by University Honors Programs, followed by further testing by the department. Introduction to literature for selected freshmen. The subject of the seminar is changed every quarter. Students who complete three English 198 seminars may earn exemption from English Composition 102. Prerequisites: Freshman standing and admission to the honors program in English.

Note: 200-level and 300-level courses are restricted to juniors, seniors, and those lower-divsion students who have the consent of the instructor.

205. MODERN ENGLISH GRAMMARS. 4 HOURS. Introduction to the newer grammars of English, including structural and transformational; some attention to their application in the teaching of English. Prerequisite: Junior standing or consent of the instructor.

210. INTRODUCTION TO THE WRITING OF POETRY. 4 HOURS. Practice in writing poetry; emphasis on analysis of student work and published examples. Prerequisite: Satisfactory completion of Comp 102 or the equivalent.

211. INTRODUCTION TO THE WRITING OF FICTION. 4 HOURS. Practice in writing fiction; emphasis on analysis of student work and published examples. Prerequisite: Satisfactory completion of Comp 102 or the equivalent.

212. TOPICS IN WRITING. 4 HOURS. Practice in creative writing; emphasis on genres other than poetry and fiction. Content varies. Prerequisite: Satisfactory completion of Comp 102 or the equivalent.

219. LITERATURE AND POLITICS. 4 HOURS. Same as Political Science 219. For majors and nonmajors. The portrayal of political ideas and problems in li-

terature. Prerequisite: 8 hours of English or junior standing or consent of the instructor.

220. LITERATURE AND POPULAR CULTURE. 4 HOURS. Same as Humanities 220. For English majors and nonmajors. The relationship between a society's literature and its various forms of popular culture. Content varies. Prerequisite: Junior standing or 8 hours of English or consent of the instructor.

222. THE CITY IN LITERATURE. 4 HOURS. For English majors and nonmajors. Man's urban experience as it is reflected in literature. Content varies. Prerequisite: Junior standing or 8 hours of English or consent of the instructor.

240. INTRODUCTION TO TECHNIQURS OF LITERARY CRITICISM AND SCHOLARSHIP. 4 HOURS. For English majors and minors. Methods and approaches to the analysis and criticism of literary texts and techniques of scholarship. Prerequisites: Junior standing, English major or minor, and Engl 152 or Engl 160, 161, 162.

260. SURVEY OF AMERICAN LITERATURE I: FROM THE BEGINNINGS THROUGH HAWTHORNE. 4 HOURS. Representative selections; emphasis on Franklin, Poe, Emerson, Thoreau, and Hawthorne. Prerequisite: Junior standing or 12 hours of English or consent of the instructor.

261. SURVEY OF AMERICAN LITERATURE II: FROM MELVILLE THROUGH THE LATE NINETEENTH CENTURY. 4 HOURS. Representative selections; emphasis on Melville, Whitman, Dickinson, Twain, and James. Prerequisite: Junior standing or 12 hours of English or consent of the instructor.

262. SURVEY OF AMERICAN LITERATURE III: FROM THE EARLY TWENTIETH CENTURY TO THE PRESENT. 4 HOURS. Representative selections; the Naturalists, Frost, Eliot, Hemingway, Faulkner, and others. Prerequisite: Junior standing or 12 hours of English or consent of the instructor.

278. MODERN DRAMA I: FROM 1870 TO 1920. 4 HOURS. Representative selections; emphasis on Ibsen, Strindberg, Shaw, and Chekhov. Prerequisite: Junior standing or consent of the instructor.

279. MODERN DRAMA II: FROM 1920 TO THE PRESENT. 4 HOURS. Representative selections; Pirandello, Brecht, O'Neill, Lorca, O'Casey, Giraudoux, Beckett, and others. Prerequisite: Junior standing or consent of the instructor.

280. INTRODUCTION TO LIBRARY SCIENCE AND BIBLIOGRAPHY FOR TEACHERS OF HIGH SCHOOL ENGLISH. 4 HOURS. The principles of library organization, bibliography, research, and book selection for grades seven through twelve. Prerequisites: Junior standing or 12 hours of English or consent of the instructor.

282. PRACTICUM IN ENGLISH EDUCATION. 4 HOURS. The teaching of English. Conducted at a designated junior or senior high school; emphasis on observation and experience in the school setting. Prerequisite: Ed 170.

285. TOPICS IN FILM AND LITERATURE. 4 HOURS. May be repeated for a maximum of 12 hours of credit. Study of a topic in the comparative study of film and literature. Content varies. Prerequisite: Junior standing or consent of the instructor.

295. TOPICS IN ENGLISH AND AMERICAN LITERATURE. 4 HOURS. May be repeated for a maximum of 12 hours. Study of a topic, genre, or movement. Content varies. Prerequisite: Junior standing or consent of the instructor.

296. STUDENT-INITIATED COURSE. 4 HOURS. Study of an author, topic, movement, or genre; emphasis on English and American literature. All course proposals must be approved by the Department of English before the course can be offered. Instructions for the submission of course proposals may be obtained from the department. Prerequisite: Junior standing or consent of the instructor.

297. SENIOR SEMINAR. 4 HOURS. May be repeated for a maximum of 12 hours. Study of an author, topic, genre, or movement. Content varies. Prerequisites: Senior standing and 12 hours of English.

298. SENIOR HONORS SEMINAR. 4 HOURS. May be repeated for a maximum of 12 hours. Study of an author, topic, movement, or genre. Content varies. Prerequisites: Senior standing and admission to the honors program in English.

299. INDEPENDENT STUDY IN ENGLISH AND AMERICAN LITERATURE. 2 TO 4 HOURS. May be repeated for a maximum of 4 hours. Students must consult with the course coordinator about admission and course requirements. Topics must not duplicate material covered in any currently listed course in the English or humanities curricula and must be approved by the department course coordinator. For a minimum of 2 hours of credit, the student must write a paper of substance, a copy of which must be filed with the course coordinator at the end of the term in which the course is taken. Registration for English 299 is closed after the tenth day of instruction in any term. Prerequisites: Senior standing and consent of the course coordinator; for English majors, a grade point average of 4.00 in all English courses above the 100 level; for nonmajors, a grade point average of 4.20 in all English courses.

300. HISTORY OF THE ENGLISH LANGUAGE. 4 HOURS. English in its relationship to other languages; historical account of its development. Prerequisite: Senior standing or 12 hours of English or consent of the instructor.

301. THE STRUCTURE OF MODERN ENGLISH. 4 HOURS. Critical evaluation of traditional, structural, and transformational grammatical descriptions; detailed survey of a transformational syntax of English. Prerequisite: Engl 300 or Ling 305.

302. INTRODUCTION TO OLD ENGLISH. 4 HOURS. The elements of Old English grammar and the reading of graded prose selections. Prerequisite: Senior standing or 12 hours of English or consent of the instructor.

303. OLD ENGLISH POETRY AND PROSE. 4 HOURS. Representative selections to 1200, exclusive of *Beowulf*. Prerequisite: Engl 302 or the equivalent.

304. *BEOWULF*. 4 HOURS. A detailed explication of the poem. Prerequisite: Engl 303 or the equivalent.

305. INTRODUCTION TO MIDDLE ENGLISH. 4 HOURS. A linguistic examination of Middle English and its dialects. Prerequisite: Senior standing or 12 hours of English or consent of the instructor.

306. MIDDLE ENGLISH LITERATURE, EXCLUSIVE OF CHAUCER. 4 HOURS. Representative selections; emphasis on the more important lyric, dra-

matic, and narrative works, such as *Piers Plowman, Pearl, Gawain,* and *Everyman.* Prerequisite: Senior standing or 12 hours of English or consent of the instructor.

307. STUDIES IN MEDIEVAL ENGLISH LITERATURE. 4 HOURS. May be repeated for a maximum of 12 hours of credit. Study of a topic, movement, or genre. Content varies. Prerequisite: Senior standing or 12 hours of English or consent of the instructor.

308. CHAUCER. 4 HOURS. Survey of Chaucer's major works. Prerequisite: Senior standing or 12 hours of English or consent of the instructor.

310. ENGLISH LITERATURE OF THE RENAISSANCE I. 4 HOURS. Representative selections; emphasis on Skelton, More, Elyot, Wyatt, Surrey, Lyly, Sidney, Spenser, and Marlowe. Prerequisite: Senior standing or 12 hours of English or consent of the instructor.

311. ENGLISH LITERATURE OF THE RENAISSANCE II. 4 HOURS. Representative selections; emphasis on Ralegh, Bacon, Donne, Jonson, Hobbes, Herbert, Browne, and Milton. Prerequisite: Senior standing or 12 hours of English or consent of the instructor.

312. RENAISSANCE DRAMA, EXCLUSIVE OF SHAKESPEARE. 4 HOURS. May be repeated for a maximum of 8 hours of credit. Content varies between Tudor drama (Udall, Norton, Sackville, Lyly, Kyd, Marlowe, Dekker, and others) and Stuart drama (Chapman, Marston, Jonson, Beaumont, Fletcher, Webster, Middleton, Rowley, and others). Prerequisite: Senior standing or 12 hours of English or consent of the instructor.

313. SHAKESPEARE I. 4 HOURS. The poems and early plays. Prerequisite: Senior standing or 12 hours of English or consent of the instructor.

314. SHAKESPEARE II. 4 HOURS. The later plays. Prerequisite: Senior standing or 12 hours of English or consent of the instructor.

315. MILTON. 4 HOURS. Same as Religious Studies 350. Survey of Milton's poetry and prose, with emphasis on his major works. Prerequisite: Senior standing or 12 hours of English or consent of the instructor.

316. MAJOR AUTHORS OF RENAISSANCE LITERATURE. 4 HOURS. May be repeated for a maximum of 12 hours of credit. Study of a single figure, such as Spenser, Donne, Jonson. Content varies. Prerequisite: Senior standing or 12 hours of English or consent of the instructor.

317. STUDIES IN RENAISSANCE LITERATURE. 4 HOURS. May be repeated for a maximum of 12 hours of credit. Study of a topic, movement, or genre. Content varies. Prerequisite: Senior standing or 12 hours of English or consent of the instructor.

320. ENGLISH LITERATURE OF THE RESTORATION AND EIGHTEENTH CENTURY I: 1660 TO 1714. 4 HOURS. Representative selections; emphasis on Dryden, Restoration drama, and the early works of Swift and Pope. Prerequisite: Senior standing or 12 hours of English or consent of the instructor.

321. ENGLISH LITERATURE OF THE RESTORATION AND EIGHTEENTH CENTURY II: 1715 to 1744. 4 HOURS. Representative selections; emphasis on the early novelists (Defoe, Richardson, and Fielding) and the later works of Swift and Pope. Prerequisite: Senior standing or 12 hours of English or consent of the instructor.

322. ENGLISH LITERATURE OF THE RESTORATION AND EIGHTEENTH CENTURY III: 1745 TO 1789. 4 HOURS. Representative selections; emphasis on the Johnson circle and the mid-century novelists (Richardson, Fielding, Sterne, and Smollett). Prerequisite: Senior standing or 12 hours of English or consent of the instructor.

323. RESTORATION AND EIGHTEENTH-CENTURY DRAMA. 4 HOURS. May be repeated for a maximum of 8 hours of credit. Restoration dramatists (principally Dryden, Etherege, Wycherley, Otway, Shadwell, Vanbrugh, Cibber, and Congreve) and eighteenth-century dramatists (Addison, Steele, Gay, Fielding, Farquhar, Cumberland, Sheridan, Goldsmith, and others). Prerequisite: Senior standing or 12 hours of English or consent of the instructor.

324. THE EIGHTEENTH-CENTURY NOVEL. 4 HOURS. Representative selections; Defoe, Richardson, Fielding, Sterne, Smollett, and some of the minor novelists of the period. Prerequisite: Senior standing or 12 hours of English or consent of the instructor.

325. MAJOR AUTHORS OF RESTORATION AND EIGHTEENTH-CENTURY LITERATURE. 4 HOURS. May be repeated for a maximum of 12 hours of credit. Study of a single figure, such as Dryden, Swift, Pope, Johnson, Fielding. Content varies. Prerequisite: Senior standing or 12 hours of English or consent of the instructor.

326. STUDIES IN RESTORATION AND EIGHTEENTH-CENTURY LITERATURE. 4 HOURS. May be repeated for a maximum of 12 hours of credit. Study of a topic, movement, or genre. Content varies. Prerequisite: Senior standing or 12 hours of English or consent of the instructor.

330. ENGLISH LITERATURE OF THE ROMANTIC PERIOD I. 4 HOURS. Representative selections; emphasis on Blake, Wordsworth, and Coleridge. Prerequisite: Senior standing or 12 hours of English or consent of the instructor.

331. ENGLISH LITERATURE OF THE ROMANTIC PERIOD II. 4 HOURS. Representative selections; emphasis on Byron, Shelley, and Keats. Prerequisite: Senior standing or 12 hours of English or consent of the instructor.

332. MAJOR AUTHORS OF THE ROMANTIC PERIOD. 4 HOURS. May be repeated for a maximum of 12 hours of credit. Study of a single figure, such as Blake, Wordsworth, Coleridge, Byron, Shelley, Keats. Content varies. Prerequisite: Senior standing or 12 hours of English or consent of the instructor.

333. STUDIES IN ROMANTIC LITERATURE. 4 HOURS. May be repeated for a maximum of 12 hours of credit. Study of a topic, movement, or genre. Content varies. Prerequisite: Senior standing or 12 hours of English or consent of the instructor.

340. ENGLISH LITERATURE OF THE VICTORIAN PERIOD I: POETRY. 4 HOURS. Representative selections; emphasis on Tennyson, Browning, Arnold, Swinburne, Hopkins, Hardy. Prerequisite: Senior standing or 12 hours of English or consent of the instructor.

341. ENGLISH LITERATURE OF THE VICTORIAN PERIOD II: NONFICTION PROSE. 4 HOURS. Representative selections; emphasis on Carlyle, Mill, Newman, Arnold, Ruskin, Pater. Prerequisite: Senior standing or 12 hours of English or consent of the instructor.

342. ENGLISH LITERATURE OF THE VICTORIAN PERIOD III: THE NOVEL. 4 HOURS. Representative selections; emphasis on Dickens, Thackeray, Trollope, Eliot, Meredith, Butler, Hardy. Prerequisite: Senior standing or 12 hours of English or consent of the instructor.

343. MAJOR AUTHORS OF VICTORIAN LITERATURE. 4 HOURS. May be repeated for a maximum of 12 hours of credit. Study of a single figure, such as Arnold, Browning, Carlyle, Dickens, Eliot, Mill, Newman, Tennyson, Thackeray, Trollope. Content varies. Prerequisite: Senior standing or 12 hours of English or consent of the instructor.

344. STUDIES IN VICTORIAN LITERATURE. 4 HOURS. May be repeated for a maximum of 12 hours of credit. Study of a topic, movement, or genre. Content varies. Prerequisite: Senior standing or 12 hours of English or consent of the instructor.

350. MODERN BRITISH LITERATURE I: 1890 TO 1930. 4 HOURS. Representative selections; Yeats, Shaw, de la Mare, Conrad, Joyce, Woolf, Lawrence, and others. Prerequisite: Senior standing or 12 hours of English or consent of the instructor.

351. MODERN BRITISH LITERATURE II: 1930 TO THE PRESENT. 4 HOURS. Representative selections; Yeats, Auden, Thomas, Spender, Greene, Huxley, Pinter, and others. Prerequisite: Senior standing or 12 hours of English or consent of the instructor.

352. MODERN BRITISH FICTION: 1900 TO 1945. 4 HOURS. Conrad, Joyce, Lawrence, Orwell, Waugh, Woolf, and others. Prerequisite: Senior standing or 12 hours of English or consent of the instructor.

353. MODERN BRITISH FICTION: 1945 TO THE PRESENT. 4 HOURS. Amis, Fowles, Greene, Murdoch, Powell, and others. Prerequisite: Senior standing or 12 hours of English or consent of the instructor.

354. MODERN IRISH LITERATURE: 1880 TO THE PRESENT. 4 HOURS. May be repeated for a maximum of 8 hours of credit. Representative selections; emphasis on George Moore, Wilde, Yeats, Gregory, Synge, Stephens, Joyce, O'Faolain, O'Connor. Prerequisite: Senior standing or 12 hours of English or consent of the instructor.

355. MAJOR AUTHORS OF MODERN AMERICAN AND BRITISH LITERATURE. 4 HOURS. May be repeated for a maximum of 12 hours of credit. Study of one or two figures, such as Auden, Conrad, Eliot, Faulkner, Joyce, Hemingway, Shaw, Yeats. Prerequisite: Senior standing or 12 hours of English or consent of the instructor.

356. STUDIES IN MODERN AMERICAN AND BRITISH LITERATURE. 4 HOURS. May be repeated for a maximum of 12 hours of credit. Study of a topic, movement, or genre. Content varies. Prerequisite: Senior standing or 12 hours of English or consent of the instructor.

357. MODERN BRITISH POETRY: 1900 TO 1945. 4 HOURS. Representative selections; Hardy, Housman, Yeats, Graves, Auden, and others. Prerequisite: Senior standing or 12 hours of English or consent of the instructor.

358. DEVELOPMENTS IN CONTEMPORARY AMERICAN AND BRITISH POETRY. 4 HOURS. May be repeated for a maximum of 12 hours of credit. Study

of a topic, movement, or genre. Content varies. Prerequisite: Senior standing or 12 hours of English or consent of the instructor.

359. DEVELOPMENTS IN CONTEMPORARY FICTION. 4 HOURS. May be repeated for a maximum of 12 hours of credit. Study of a topic, movement, or genre. Content varies. Prerequisite: Senior standing or 12 hours of English or consent of the instructor.

360. AMERICAN POETRY I: BEGINNINGS TO 1900. 4 HOURS. Representative selections; Taylor, Emerson, Poe, Whitman, Dickinson, and others. Prerequisite: Senior standing or 12 hours of English or consent of the instructor.

361. AMERICAN POETRY II: 1900 TO 1945. 4 HOURS. Representative selections; emphasis on Frost, Pound, Eliot, Cummings, Stevens, Williams. Prerequisite: Senior standing or 12 hours of English or consent of the instructor.

362. AMERICAN FICTION I: 1800 TO 1860. 4 HOURS. Representative selections; Brown, Cooper, Hawthorne, Melville, and others. Prerequisite: Senior standing or 12 hours of English or consent of the instructor.

363. AMERICAN FICTION II: 1860 TO 1900. Representative selections; emphasis on Twain, James, Howells, Adams, Jewett, Frederic, Norris. Prerequisite: Senior standing or 12 hours of English or consent of the instructor.

364. AMERICAN FICTION III: 1900 TO 1945. 4 HOURS. Representative selections; emphasis on Dreiser, Lewis, Fitzgerald, Hemingway, Faulkner, Wolfe. Prerequisite: Senior standing or 12 hours of English or consent of the instructor.

365. CONTEMPORARY AMERICAN FICTION: 1945 TO THE PRESENT. 4 HOURS. Representative selections; Warren, Mailer, Ellison, Nabokov, Malamud, Bellow, and others. Prerequisite: Senior standing or 12 hours of English or consent of the instructor.

366. MAJOR AUTHORS OF AMERICAN LITERATURE THROUGH 1914. 4 HOURS. May be repeated for maximum of 12 hours of credit. Study of a single figure, such as Hawthorne, Melville, Whitman, Dickinson, Howells, James, Twain, and others. Content varies. Prerequisite: Senior standing or 12 hours of English or consent of the instructor.

367. PERIODS AND MOVEMENTS IN AMERICAN LITERATURE. 4 HOURS. May be repeated for a maximum of 12 hours of credit. Study of a single topic, such as the American Renaissance, Early National Literature, or the Twenties, or of such movements as Puritanism, Transcendentalism, Realism, Naturalism, or Imagism. Prerequisite: Senior standing or 12 hours of English or consent of the instructor.

368. STUDIES IN AMERICAN LITERATURE THROUGH 1914. 4 HOURS. May be repeated for a maximum of 12 hours of credit. Study of a topic or genre. Content varies. Prerequisite: Senior standing or 12 hours of English or consent of the instructor.

370. STUDIES IN RACIAL AND ETHNIC DIMENSIONS OF AMERICAN LITERATURE. 4 HOURS. May be repeated for a meximum of 12 hours of credit. Content varies. Prerequisites: Senior standing or 12 hours of English or consent of the instructor.

371. STUDIES IN THE ORAL TRADITION OF NATIVE AMERICANS. 4 HOURS. Same as Native American Studies 371, Philosophy 371, and Religious Studies 371. Content, cultural context, and functions of oral traditions. Styles and performances. Specific topics are announced each term. Prerequisite: Junior standing or NASt 275.

375. HISTORY OF LITERARY CRITICISM I. 4 HOURS. A survey; emphasis on the major critics from Plato to Johnson. Prerequisite: Senior standing or 12 hours of English or consent of the instructor.

376. HISTORY OF LITERARY CRITICISM II. 4 HOURS. Survey of nineteenth-century and modern literary criticism; emphasis on the major critics from Wordsworth to the present. Prerequisite: Senior standing or 12 hours of English or consent of the instructor.

377. STUDIES IN LITERARY CRITICISM. 4 HOURS. May be repeated for a maximum of 12 hours of credit. Study of a topic or movement. Content varies. Prerequisite: Senior standing or 12 hours of English or consent of the instructor.

381. TEACHING OF ENGLISH. 4 HOURS. Theory and practice; emphasis on current approaches to language and literature. Undergraduate students in the teacher education program must take this course the term preceding their student teaching. Prerequisite: Senior standing or consent of the instructor.

383. TEACHING ENGLISH AS A SECOND LANGUAGE. 4 HOURS. Same as Education 383 and Linguistics 383. The methodology of teaching English to residents of the United States who do not speak the language, especially Spanish-Americans. Prerequisite: Engl 300 or 205 or Ling 305.

385. STUDIES IN TEACHING THE ENGLISH LANGUAGE AND LINGUISTICS. 4 HOURS. May be repeated for a maximum of 12 hours of credit. Study of a topic; content varies.

386. STUDIES IN TEACHING RHETORIC AND COMPOSITION. 4 HOURS. May be repeated for a maximum of 12 hours of credit. Study of a topic; content varies.

387. ADOLESCENT CULTURE AND THE TEACHING OF ENGLISH. 4 HOURS. Relationships between English instruction and student attitudes and beliefs. Emphasis on adolescent response to language and literature. Prerequisite: Senior standing or 12 hours of English or consent of the instructor.

388. NONPRINT MEDIA AND THE TEACHING OF ENGLISH. 4 HOURS. The effects of film, television, and technology on the teaching of English. Prerequisite: Senior standing or 12 hours of English or consent of the instructor.

390. THE WRITING OF POETRY. 4 HOURS. May be repeated for a maximum of 8 hours. Advanced practice; emphasis on analysis of student work and on published examples. Prerequisite: Satisfactory completion of Engl 210 or the equivalent or consent of the instructor.

391. THE WRITING OF FICTION. 4 HOURS. May be repeated for a maximum of 8 hours. Advanced practice; emphasis on analysis of student work and on published examples. Prerequisite: Satisfactory completion of Engl 211 or the equivalent or consent of the instructor.

395. STUDIES IN BRITISH AND AMERICAN DRAMA. 4 HOURS. May be repeated for a maximum of 12 hours of credit. Study of an author, topic, or

movement. Content varies. Prerequisite: Senior standing or 12 hours of English or consent of the instructor.

398. STUDIES IN GENRES, MODES, MULTIMEDIA, INFLUENCES, AND MOVEMENTS. 4 HOURS. May be repeated for a maximum of 12 hours of credit. Study of a particular subject in literature. Content varies. Prerequisite: Senior standing or 12 hours of English or consent of the instructor.

399. INDEPENDENT STUDY. 1 TO 4 HOURS. Open only to English majors and graduate students in English. Admission to this course is only on the advise and initiation of the department. Individual study under the direction of an assigned faculty member. The nature of the work is determined by the tutor on the basis of the student's needs and interests. Prerequisite: Senior standing.

English Composition (Comp)

101. FRESHMAN COMPOSITION I. 4 HOURS. Elementary training and practice in the comprehension and expression of written English.

102. FRESHMAN COMPOSITION II. 4 HOURS. Elementary training and practice in the comprehension and expression of written English. Prerequisite: Comp 101 or the equivalent.

103. ENGLISH AS A FOREIGN LANGUAGE I. 4 HOURS. Intensive review of basic English structure for foreign students who are inadequately prepared for English Composition 101. Prerequisites: Reading knowledge of English, ability to understand instructions, and consent of the instructor.

104. ENGLISH AS A FOREIGN LANGUAGE II. 4 HOURS. Continues English Composition 103. For students who may be inadequately prepared for English Composition 101. A rapid, intensive review of basic English structure; study of more complicated sentence patterns; practice in oral and written composition. Prerequisite: Comp 103 or consent of the instructor.

105. ENGLISH AS A FOREIGN LANGUAGE III. 4 HOURS. May be taken concurrently with English Composition 101. Intensive remedial writing for the foreign student in the area of his special difficulties. Prerequisite: Comp 104 or consent of the instructor.

115. ADVANCED COMPOSITION. 4 HOURS. Practice in exposition; emphasis on organization, paragraphing, and sentence structure. Prerequisite: A grade of A or B in Comp 102.

180. INTRODUCTION TO COMPOSITION. 4 HOURS. May be repeated for a maximum of 12 hours. For students participating in the Educational Assistance Program. Basic grammar, sentence structure, organization and development of paragraphs and themes.

200. COMPOSITION PRACTICE I. 2 HOURS. Primarily for juniors and seniors; open to graduate students for 0 hours of credit. Improvement of composition skills; emphasis on review of mechanics, sentence structure, organization, and development. Prerequisite: Satisfactory completion of Comp 102 or the equivalent.

201. COMPOSITION PRACTICE II. 2 HOURS. Improvement of composition skills; emphasis on review of research techniques and practice in writing analytical and investigative papers. Prerequisite: Comp 102 or 200 or the equivalent.

251. BUSINESS COMMUNICATION. 4 HOURS. Study and practice in written informative and/or persuasive communications in business and industry. Prerequisite: Comp 101, 102.

French

Professors: William M. Schuyler, PhD, Head of the Department; Robert E. Hallowell, PhD; Marie E. Lein, PhD; Charles M. Lombard, PhD.

Associate Professors: Priscilla P. Clark, PhD; Peter V. Conroy, Jr., PhD; Barbara G. Mittman, PhD; Kenneth I. Perry, PhD; Franklin P. Sweetser, PhD; Marie-Odile Sweetser, PhD; Dorothy R. Thelander, PhD.

Assistant Professors: Dorothy G. Barber, MA; Sylvia M. Gladish, PhD; June Moravcevich, PhD; Sylvia Patlogan, MA; Mary Eloise Ragland, PhD; Clara S. Skogen, MA; Yvonne B. Weinstein, *Diplome d'Etudes Superieures.*

Instructors: Janet Eisenberg, MA; Douglas E. Johnson, MA; Nancy A. Tomasek, MA.

Major—for the Bachelor of Arts, a minimum of 54 hours (excluding all 100-level courses), including:

French 201, and *two* from 202, 203, 204, 205	12 hours
211, 212[1]	6
221, 222	6
390	4
French electives	26, of which 16 hours must be at the 300 level.

It is recommended that French majors take one year of English literature and one year of European history.

Departmental Distinction: Recommendation is based on a 4.50 average in all courses counted for the major.

Minor—A minimum of 20 hours at the 200 level or above, selected with the approval of the Department of French.

Teacher Education in French: Requirements for Teaching in Secondary Schools

Major—for the Bachelor of Arts, 54 hours

French 201 and *two* from 202, 203, 204, 205	12 hours
211, 212[1]	6
221, 222	6
281	3
381, 382	8
French electives	19, of which 12 hours must be at the 300 level.

Minor—30 hours

French 104, 105, 106 (or equivalents)	12 hours
201 and any *two* from 202, 203, 204, 205	12
211, 221	6

212, 222, and 382 are recommended.

1. Native speakers substitute other 200- or 300-level courses.

Overseas Program

A significant portion of the credits for the major in French may be earned through the Foreign Study Program conducted in Paris. Students who wish to be considered for this program should consult the department coordinator concerning prerequisites and requirements.

Courses (Fr)

101. ELEMENTARY FRENCH I. 4 HOURS. Two additional half hours per week in the language laboratory. For students who have not studied French. Grammar, pronunciation, reading, composition, conversation.

102. ELEMENTARY FRENCH II. 4 HOURS. Two additional half hours per week in the language laboratory. Continues French 101. Prerequisite: Fr 101 or the equivalent.

103. ELEMENTARY FRENCH III. 4 HOURS. Two additional half hours per week in the language laboratory. Continues French 102. Prerequisite: Fr 102 or the equivalent.

104. INTERMEDIATE FRENCH I. 4 HOURS. Two additional half hours per week in the language laboratory. Rapid reading of modern authors, syntax and composition, conversational practice. Prerequisite: Fr 103 or two years of high school French or the equivalent.

105. INTERMEDIATE FRENCH II. 4 HOURS. Two additional half hours per week in the language laboratory. Continues French 104. Prerequisite: Fr 104 or the equivalent.

106. INTERMEDIATE FRENCH III. 4 HOURS. Two additional half hours per week in the language laboratory. Continues French 105. Prerequisite: Fr 105 or the equivalent.

107. READING FRENCH I. 4 HOURS. Primarily for upper-division and graduate students in other departments. Does not meet graduation requirements in a foreign language. Basic grammar, vocabulary, and reading practice for beginning students who wish to acquire a rapid reading knowledge of French.

108. READING FRENCH II. 4 HOURS. Grammar, vocabulary; general and special reading and translation. Prerequisite: Fr 107 or 103 or the equivalent or consent of the instructor.

110. INTERMEDIATE FRENCH—READING OPTION I. 4 HOURS. May be substituted for French 104. Readings in French; emphasis on cultural materials. Class discussion in English. Prerequisite: Fr 103 or two years of high school French or the equivalent.

111. INTERMEDIATE FRENCH—READING OPTION II. 4 HOURS. May be substituted for French 105. Readings in French; emphasis on cultural materials. Class discussion in English. Prerequisite: Fr 104 or the equivalent.

112. INTERMEDIATE FRENCH—READING OPTION III. 4 HOURS. May be substituted for French 106. Satisfies the graduation requirement in the College of Liberal Arts and Sciences. Readings in French; emphasis on cultural materials. Class discussion in English. Prerequisite: Fr 105 or the equivalent.

116. INTERMEDIATE FRENCH—CONVERSATION OPTION. 4 HOURS. May be substituted for French 106. Satisfies the graduation requirement in the College of Liberal Arts and Sciences. Practice in speaking French. Prerequisite: Fr 105 or the equivalent.

161. FRENCH CIVILIZATION I. 4 HOURS. Not open to French majors or minors. Instruction and readings in English. Same as Humanities 161. History of French civilization from the end of the Middle Ages to the end of the Wars of Religion, considered in the light of changes that were typical for all of Western Europe. The literature, religious thought, art, and sciences of this period are viewed against the backgound of political and social change.

162. FRENCH CIVILIZATION II. 4 HOURS. Not open to French majors or minors. Instruction and readings in English. Same as Humanities 162. Social, political, and religious changes in the seventeenth and eighteenth centuries studied through the literature of the classical period and the French Enlightenment.

163. FRENCH CIVILIZATION III. 4 HOURS. Not open to French majors or minors. Instruction and readings in English. Same as Humanities 163. The ideological struggles and social-political changes of the nineteenth and twentieth centuries as seen through the novels, memoirs, histories, and social tracts of the period.

167. RELIGIOUS THERMES OF FRENCH WRITERS I. 4 HOURS. Same as Humanities 167 and Religious Studies 167. Evolution of the religious outlook of French writers from a theocentric to a humanistic perspective from the Middle Ages to 1700. Instruction and readings in English. Prerequisite: Consent of the instructor.

168. RELIGIOUS THEMES OF FRENCH WRITERS II. 4 HOURS. Same as Humanities 168 and Religious Studies 168. The triumph of humanistic faith and its collapse (1700 to 1850). Instruction and readings in English. Prerequisite: Consent of the instructor.

169. RELIGIOUS THEMES OF FRENCH WRITERS III. 4 HOURS. Same as Humanities 169 and Religious Studies 169. From 1850 to the present: the loss of faith in science; Catholic revival; existentialism; the absurd. Instruction and readings in English. Prerequisite: Consent of the instructor.

180. RABELAIS AND MONTAIGNE. 4 HOURS. Not open to French majors or minors. Same as Humanities 180. Rabelais's *Gargantua, Pantagruel,* and *Book Third* and Montaigne's principal essays in English translation.

181. ROUSSEAU AND VOLTAIRE. 4 HOURS. Not open to French majors or minors. Same as Humanities 181. Selected works in English translation.

182. BALZAC AND STENDHAL. 4 HOURS. Not open to French majors or minors. Same as Humanities 182. Selected works in English translation.

183. CAMUS AND SARTRE. 4 HOURS. Not open to French majors or minors. Same as Humanities 183. Selected works in English translation.

184. TOPICS IN FRENCH LITERATURE IN TRANSLATION. 4 HOURS. May be repeated for credit. Not open to French majors or minors. Same as Humanities 184. Selections from the works of France's major writers in English translation. Authors and topics are announced each term.

186. MASTERPIECES OF FRENCH LITERATURE IN ENGLISH TRANSLATION. 4 HOURS. Not open to French majors or minors. Same as Humanities 186. Reading of selections from the seventeenth century to the present; the works of Moliere, Voltaire, Rousseau, Balzac, Flaubert, Baudelaire, Camus, Samuel Beckett, Ionesco, and others.

201. INTRODUCTION TO FRENCH LITERATURE I. 4 HOURS. Selected masterpieces representing the major genres. Prerequisite: Fr 106 or four years of high school French or the equivalent.

202. INTRODUCTION TO FRENCH LITERATURE II. 4 HOURS. The major currents and movements of the seventeenth century; reading of selected masterpieces. Prerequisite: Fr 201 or the equivalent.

203. INTRODUCTION TO FRENCH LITERATURE III. 4 HOURS. The major currents and movements of the eighteenth century; reading of selected masterpieces. Prerequisite: Fr 201 or the equivalent.

204. INTRODUCTION TO FRENCH LITERATURE IV. 4 HOURS. The major currents and movements of the nineteenth century; reading of selected masterpieces. Prerequisite: Fr 201 or the equivalent.

205. INTRODUCTION TO FRENCH LITERATURE V. 4 HOURS. The major currents and movements of the twentieth century; reading of selected masterpieces. Prerequisite: Fr 201 or the equivalent.

211. DICTION AND CONVERSATION I. 3 HOURS. Not open to native French speakers except with the approval of the department. Conversational practice to develop oral facility; exercises for the improvement of pronunciation and diction. Practice in the language laboratory is required. Prerequisite: Fr 106 or four years of high school French.

212. DICTION AND CONVERSATION II. 3 HOURS. Not open to native French speakers except with the approval of the department. Continues French 211. Practice in the language laboratory is required. Prerequisite: Fr 211 or the equivalent.

213. DICTION AND CONVERSATION III. 3 HOURS. Not open to native French speakers except with the approval of the department. Continues French 212. May be required of a French major on recommendation of the instructor in French 212. Practice in speaking French. Prerequisite: Fr 212 or the equivalent or consent of the instructor.

221. COMPOSITION I. 3 HOURS. Training in writing French, translation from English, free composition. Prerequisite: Fr 106 or four years of high school French.

222. COMPOSITION II. 3 HOURS. Advanced study of rules of French grammar; special attention to the analysis of sentence structure. Exercises in advanced composition. Prerequisite: Fr 221 or the equivalent.

223. COMPOSITION III. 3 HOURS. May be required of a French major on recommendation of the instructor in French 222. Advanced study of syntax; emphasis on special constructions of the French sentence. Analysis of the language of literary texts, magazine articles, and criticism. Practice in free composition and simple *explications de texte*. Prerequisite: Fr 222 or the equivalent or consent of the instructor.

265. SOCIAL AND CULTURAL HISTORY. 3 HOURS. Social thought and the fine arts as background for the study of French literature. Prerequisites: Fr 201 and any two of Fr 202, 203, 204, 205 or the equivalents.

270. EDUCATIONAL PRACTICE WITH SEMINAR I. 8 HOURS. Same as Education 270. The first half of a two-segment sequence of practice teaching, including seminar, to meet certification requirements for teaching in the elementary or secondary school. Prerequisites: Ed 250, admission to advanced standing, and recommendation of the department of specialization.

271. EDUCATIONAL PRACTICE WITH SEMINAR II. 8 HOURS. Same as Education 271. The second half of a two-segment sequence of practice teaching, including seminar, to meet certification requirements for teaching in the elementary or secondary school Prerequisites: Ed 250, credit or concurrent registration in Fr 270, admission to or continuation of advanced standing, and recommendation of the department of specialization.

281. FRENCH PHONETICS I. 3 HOURS. Two hours per week in the language laboratory are required. The International Phonetic Alphabet as applied to the French sound system. French pronunciation, intonation, rhythm, and stress are analyzed and practiced. Prerequisite: Fr 106 or the equivalent.

282. FRENCH PHONETICS II. 3 HOURS. Continues French 281. Emphasis on corrective phonetics, phonetic transcription, and diction. Prerequisite: Fr 281 or the equivalent.

291. STUDENT-INITIATED COURSE. 1 TO 4 HOURS. May be repeated. The amount of credit toward satisfying specific department requirements is contingent on the approval of the department committee. A special experimental seminar on topics not treated by regular course offerings. Students must activate this course themselves by directing their requests to the head of the department. Prerequisite: Fr 106 or the equivalent.

299. INDEPENDENT STUDY. 1 TO 6 HOURS. The amount of credit is designated by the department head. May be repeated for a maximum of 6 hours. For seniors majoring in French; supplements regular courses. Prerequisites: Senior standing and approval of the department.

301. STYLISTICS I: PROSE. 4 HOURS. Detailed analysis of the style of selected French authors; practice in advanced composition. Prerequisite: Fr 222 or the equivalent or consent of the instructor.

302. STYLISTICS II: POETRY. 4 HOURS. Detailed analysis of the style of selected French authors; practice in advanced composition. Prerequisite: Fr 222 or the equivalent or consent of the instructor.

311. SHORT PROSE FICTION. 4 HOURS. French prose narrative forms, excluding the novel, from the Renaissance to the present. Prerequisites: Fr 201 and any two of Fr 202, 203, 204, 205 or the equivalents or consent of the instructor.

313. PARIS AND LITERATURE. 4 HOURS. The city of Paris as an influence on and inspiration for French literature; emphasis on the nineteenth and twentieth centuries. Prerequisites: Fr 201 and any two of Fr 202, 203, 204, 205 or the equivalents or consent of the instructor.

321. FRENCH LITERATURE OF THE MIDDLE AGES. 4 HOURS. From the origins to 1300. Texts in modern French: *chansons de geste*, courtly romances

(*Chretien de Troyes et al.*), *Roman de Renard,* and others. Prerequisites: Fr 201 and any two of Fr 202, 203, 204, 205 or the equivalents or consent of the instructor.

323. HISTORY OF THE FRENCH LANGUAGE. 4 HOURS. From its origins to the present. Prerequisites: Fr 201 and any two of Fr 202, 203, 204, 205 or the equivalents or consent of the instructor.

332. FRENCH LITERATURE OF THE SIXTEENTH CENTURY. 4 HOURS. Reading and analysis of Marot, Sceve, Rabelais, Ronsard, Du Bellay, Montaigne, and others. Prerequisites: Fr 201 and any two of Fr 202, 203, 204, 205 or the equivalents or consent of instructor.

341. SEVENTEENTH-CENTURY FRENCH PROSE WRITERS. 4 HOURS. Reading and analysis of major prose writers: Descartes, Pascal, Bossuet, Mme. de Sevigne, La Bruyere, and others. Prerequisites: Fr 201 and any two of Fr 202, 203, 204, 205 or the equivalents or consent of the instructor.

342. SEVENTEENTH-CENTURY FRENCH THEATER. 4 HOURS. Reading and analysis of major dramatists: Corneille, Moliere, and Racine. Prerequisites: Fr 201 and any two of Fr 202, 203, 204, 205 or the equivalent or consent of the instructor.

344. SEVENTEENTH-CENTURY FRENCH POETRY. 4 HOURS. Reading and analysis of major poets: Malherbe, Baroque poets, La Fontaine, and Boileau. Prerequisites: Fr 201 and any two of Fr 202, 203, 204, 205 or the equivalents or consent of the instructor.

345. THE SEVENTEENTH-CENTURY FRENCH NOVEL. 4 HOURS. Reading and analysis of major novelists: d'Urfe, Sorel, Scarron, Cyrano, Mme. de Lafayette, *Les Lettres Portugaises,* and others. Prerequisites: Fr 201 and any two of Fr 202, 203, 204, 205 or the equivalents or consent of the instructor.

351. EIGHTEENTH-CENTURY FRENCH PROSE WRITERS. 4 HOURS. Reading and analysis of Lesage, Montesquieu, Diderot, Voltaire, Rousseau, and others. Prerequisites: Fr 201 and any two of Fr 202, 203, 204, 205 or the equivalents or consent of the instructor.

352. EIGHTEENTH-CENTURY FRENCH THEATER. 4 HOURS. Reading and analysis of major dramatists: Crebillon, Voltaire, Marivaux, Diderot, Beaumarchais, and others. Prerequisites: Fr 201 and any two of Fr 202, 203, 204, 205 or the equivalents or consent of the instructor.

353. LITERARY AND INTELLECTUAL CURRENTS OF THE EIGHTEENTH CENTURY. 4 HOURS. Reading and analysis of selected works tracing major literary and intellectual currents; Montesquieu, Voltaire, Rousseau, Diderot, and others. Prerequisites: Fr 201 and any two of Fr 202, 203, 204, 205 or the equivalents or consent of the instructor.

354. THE EIGHTEENTH-CENTURY FRENCH NOVEL. 4 HOURS. Reading and analysis of selected novels of Prevost, Crebillon *fils,* Voltaire, Diderot, Rousseau, and others. Prerequisites: Fr 201 and any two of Fr 202, 203, 204, 205 or the equivalents or consent of the instructor.

359. PREROMANTICISM. 4 HOURS. The Preromantic movement in France from 1761 to 1814. Prerequisites: Fr 201 and any two of Fr 202, 203, 204, 205 or the equivalents or consent of the instructor.

361. FRENCH ROMANTICISM I. 4 HOURS. Reading and analysis of selected works tracing the main developments in the Romantic movement from 1815 to 1829; Hugo, Stendhal, Merimee, Lamartine, Vigny, and others. Prerequisites: Fr 201 and any two of Fr 202, 203, 204, 205 or the equivalents or consent of the instructor.

362. FRENCH ROMANTICISM II. 4 HOURS. Reading and analysis of selected works tracing the main developments in the Romantic movement after 1830; Nerval, Baudelaire, Sand, Musset, Hugo, and others. Prerequisites: Fr 201 and any two of Fr 202, 203, 204, 205 or the equivalents or consent of the instructor.

363. THE NINETEENTH-CENTURY FRENCH NOVEL I. 4 HOURS. Reading and analysis of major novelists: Chateaubriand, Senancour, Mme. de Stael, Constant, Lamartine, and others. Prerequisites: Fr 201 and any two of Fr 202, 203, 204, 205 or the equivalents or consent of the instructor.

364. THE NINETEENTH-CENTURY FRENCH NOVEL II. 4 HOURS. Reading and analysis of major novelists: Stendhal, Balzac, Merimee, George Sand, Flaubert, and others. Prerequisites: Fr 201 and any two of Fr 202, 203, 204, 205 or the equivalents or consent of the instructor.

365. THE NINETEENTH-CENTURY FRENCH NOVEL III. 4 HOURS. Reading and analysis of major novelists: the Goncourt brothers, Zola, Maupassant, Loti, France, and others. Prerequisites: Fr 201 and any two of Fr 202, 203, 204, 205 or the equivalents or consent of the instructor.

366. NINETEENTH-CENTURY FRENCH POETRY. 4 HOURS. Major poets of the nineteenth century; Lamartine, Hugo, Musset, Vigny, Gautier, Baudelaire, Verlaine, Rimbaud, Mallarme, and others. Prerequisites: Fr 201 and any two of Fr 202, 203, 204, 205 or the equivalents or consent of the instructor.

368. MODERN FRENCH DRAMA I. 4 HOURS. Major dramatists of the nineteenth and twentieth centuries; Hugo, Vigny, Musset, Dumas *fils*, Augier, Becque, and others. Prerequisites: Fr 201 and any two of Fr 202, 203, 204, 205 or the equivalents or consent of the instructor.

369. MODERN FRENCH DRAMA II. 4 HOURS. Continues French 368. Curel, Porto-Riche, Rostand, Claudel, Lenormand, and others. Prerequisites: Fr 201 and any two of Fr 202, 203, 204, 205 or the equivalents or consent of the instructor.

370. MODERN FRENCH DRAMA III. 4 HOURS. Continues French 368 and 369. Cocteau, Giraudoux, Anouilh, Sartre, Camus, Beckett, Ionesco, and others. Prerequisites: Fr 201 and any two of Fr 202, 203, 204, 205 or the equivalents or consent of the instructor.

371. TWENTIETH-CENTURY FRENCH POETRY. 4 HOURS. Major poets of the twentieth century; Jammes, Jacob, Apollinaire, Valery, Eluard, Breton, Aragon, Perse, Michaux, Prevert, and others. Prerequisites: Fr 201 and any two of Fr 202, 203, 204, 205 or the equivalents or consent of the instructor.

372. THE TWENTIETH-CENTURY FRENCH NOVEL I. 4 HOURS. Reading and analysis of selected novels by Gide, Proust, Mauriac, Colette, Cocteau, and others. Prerequisites: Fr 201 and any two of Fr 202, 203, 204, 205 or the equivalents or consent of the instructor.

373. THE TWENTIETH-CENTURY FRENCH NOVEL II. 4 HOURS. Reading and analysis of selected novels by Malraux, Aragon, Saint-Exupery, Celine, Giraudoux, and others. Prerequisites: Fr 201 and any two of Fr 202, 203, 204, 205 or the equivalents or consent of the instructor.

374. THE TWENTIETH-CENTURY FRENCH NOVEL III. 4 HOURS. Reading and analysis of selected novels by Sartre, Camus, Robbe-Grillet, Sarraute, Butor, and other contemporary novelists. Prerequisites: Fr 201 and any two of Fr 202, 203, 204, 205 or the equivalents or consent of the instructor.

375. FRENCH ABROAD. 0 TO 45 HOURS. May be repeated for a maximum of 45 hours of credit. Lectures, seminars, and practical work in French language, literature, and civilization in France. Prerequisites: Fr 201, any one of Fr 202, 203, 204, 205, any three of Fr 211, 212, 221, 222, 3.50 overall average, and 3.50 average in French.

379. AFRO-FRENCH LITERATURE. 4 HOURS. Same as Black Studies 379. Selected prose and poetry in French by Black authors. Prerequisites: Fr 201 and any two of Fr 202, 203, 204, 205 or the equivalents or consent of the instructor.

381. INTRODUCTION TO FRENCH LINGUISTICS. 4 HOURS. French phonology, morphology, syntax, and semantics in comparison with English. Prerequisites: Fr 212, 222, 281 or the equivalents or consent of the instructor.

382. APPLIED FRENCH LINGUISTICS. 4 HOURS. Methodology, resources, classroom materials, standard practices, and problems in the teaching of French; practical application to actual classroom situations. Prerequisite: Fr 381 or consent of the instructor.

385. FOREIGN LANGUAGE COMPUTER-ASSISTED INSTRUCTION. 4 HOURS. Same as German 340, Slavic Languages and Literatures 340, and Spanish 375. Does not count toward the major. Basic introduction to the use of the TUTOR language and the PLATO IV system in foreign language instruction. Each student designs and implements instructional module as a term project. Prerequisite: Completion of the intermediate level of course work, or the equivalent, of either French, German, Spanish, or a Slavic language.

390. PERSPECTIVES IN FRENCH LITERATURE. 4 HOURS. A synthesis of specialized knowledge previously acquired in various areas at the 300 level; a new perspective on French literature in its historical development, presented through representative works by major authors. Prerequisites: Senior standing, Fr 201, and any two of Fr 202, 203, 204, 205.

399. SEMINAR ON SELECTED TOPICS. 4 HOURS. May be repeated for credit. Specific movements, authors, or works. Topics are announced in the Timetable. Prerequisite: Senior standing and/or consent of the instructor.

Geography

Clifford E. Tiedemann, PhD, Head of the Department.

Professors: Lyndon R. Babcock, PhD; James M. Blaut, PhD; Douglas B. Carter, PhD; Alden Cutshall, PhD (Emeritus); Edwin N. Thomas, PhD.

Associate Professors: Mary M. Colby, PhD (Emeritus); Edwin H. Draine, PhD; Mildred I. Finney, PhD (Emeritus); Gary L. Fowler, PhD; James E. Landing, PhD; David M. Solzman, PhD; Clifford E. Tiedemann, PhD.

Assistant Professors: Bruce G. Gladfelter, PhD; Albert J. Larson, PhD; Siim Soot, PhD.

Major—Students wishing to declare geography as a major must register with the department LAS undergraduate adviser prior to declaring their intent to the college. Every major selects a permanent, individual adviser from among the geography faculty and periodically obtains course structure and annual scheduling materials from the department office to facilitate course planning. For the Bachelor of Arts, 56 hours are required, distributed as follows:

Geography 100[2]	4
Three introductory systematic courses, either group A or B[1]	
A. Geography 101, 102, 103	
B. Geography 110, 120, 130	12
Two upper-division systematic sequences[2]	16
A survey course of either urban (250's) or regional (260's) geography	4
One 300-level course in urban (350's) and regional (360's) geography	8
Eight hours of upper-division research methods	8
Geography 391	4

Departmental Distinction: The department views satisfactory performances (good to excellent) in Geography 391 and for four hours of Geography 299 as requirements for granting this recognition. In addition, the student must qualify for College Honors.

Minor—For students majoring in other fields, the department recognizes the pattern of courses listed below as constituting a reasonable minor in geography. Students wishing to minor in geography must register with the department undergraduate adviser to be apprised of changes in offerings or anticipated opportunities. (Students who declare their intent to minor in geography to the department adviser may receive a priority status in limited enrollment courses.)

Geography 100[2]	4
Three introductory systematic courses, either group A or B, shown under the major	12
One upper-division systematic sequence[2]	8
A survey course of either urban (250's) or regional (260's) geography	4

1. Collateral courses for the major:

If group A is counted toward the major, then 12 hours of credit must be earned in any one of the following social sciences: anthropology, economics, history, political sciences, psychology, sociology, or speech.

If group B is counted toward the major, then 12 hours of credit must be earned in any one of the following natural sciences: biological sciences, geological sciences (other natural sciences are accepted only with the approval of the department undergraduate adviser).

In addition, majors are required to develop a collection of courses amounting to 24 to 36 hours in departments supportive of their systematic area(s) of emphasis. This set of courses is agreed upon by the student and the permanent faculty adviser and may consist of any organized minor offered by another department.

2. See the department undergraduate adviser for definitions of types of courses and sequences and for information concerning possible deviations from the stated requirements.

Teacher Education Major—Every student wishing to declare geography as a major field in a teacher education program must register with the department teacher education adviser prior to declaring his intent to the college. Every teacher education major selects a permanent individual adviser from among the geography faculty and periodically obtains course structure and annual scheduling materials from the department office to facilitate course planning. Every prospective student teacher in geography must indicate this intent in writing to the department teacher education adviser one year in advance of the term during which student teaching is to take place. For the Bachelor of Science, 48 hours are required, distributed as follows:

Geography 100[2]	4
Three introductory systematic courses, either group A or B, shown under the major,[1] plus a minimum of two courses beyond those used as collateral courses with either group A or B	12
Two upper-division systematic sequences[2]	16
Geography 260 and one other course from among the 250's and 260's	8
One 300-level course in regional geography	4
Geography 370	4

Teacher Education Minor—For students majoring in other teacher education curricula, the department recognizes the pattern of courses listed below as a reasonable minor in geography. Students wishing to minor in geography must register with the teacher education adviser to be apprised of changes in offerings or anticipated opportunities. (Students who declare their intent to minor in geography to the department teacher education adviser may receive a priority status in limited enrollment courses.)

Geography 100[2]	4
Three introductory systematic courses, either group A or B, shown under the major	12
Two upper-division systematic courses[2]	8
Geography 260 and one other course from among the 260's	8
Geography 370	4

Minor in Cartography—For students majoring in other fields the Department of Geography offers a minor in cartography, the art and science of creating and working with maps. Students wishing to minor in cartography must register with the department undergraduate adviser to be apprised of changes in the program or offerings

1. Collateral courses for the major:

If group A is counted toward the major, then 12 hours of credit must be earned in any one of the following social sciences: anthropology, economics, history, political sciences, psychology, sociology, or speech.

If group B is counted toward the major, then 12 hours of credit must be earned in any one of the following natural sciences: biological sciences, geological sciences (other natural sciences are accepted only with the approval of the department undergraduate adviser).

In addition, majors are required to develop a collection of courses amounting to 24 to 36 hours in departments supportive of their systematic areas(s) of emphasis. This set of courses is agreed upon by the student and the permanent faculty adviser and may consist of any organized minor offered by another department.

2. See the department undergraduate adviser for definitions of types of courses and sequences and for information concerning possible deviations from the stated requirements.

involved. The minor in cartography consists of a minimum of 30 hours, of which at least 20 must be at the 200 or 300 level. Course work to be distributed as follows:

Geography 185, 285 and 385

Geography 286 and 386; or 287 and 387; or 381 and 382

At least 10 additional hours selected from Geography 100, 182, 280, 383 and/or approved courses from cognate disciplines (anthropology, geological sciences, philosophy, systems engineering) chosen in consultation with the geography department undergraduate adviser. Courses credited toward the student's major or another minor may not be credited toward the minor in cartography, and no more than 4 hours of independent study will be allowd for the minor.

Courses (Geog)

100. CONCEPTS IN GEOGRAPHY. 4 HOURS. Basic geographic concepts, including the notions of spatial distribution, areal association, spatial interaction, and regionalism.

101. PHYSICAL GEOGRAPHY I: LANDFORMS AND MINERAL RESOURCES. 4 HOURS. The earth and its resources; the earth grid and its portrayal on maps; interpretation of landforms from a geographic point of view; occurrence and use of mineral resources.

102. PHYSICAL GEOGRAPHY II: EARTH-SUN RELATIONS AND ELEMENTS OF WEATHER. 4 HOURS. Planetary relations; the atmosphere, its composition, function, and behavior in the production of weather types; air masses and air mass analysis.

103. PHYSICAL GEOGRAPHY III: CLIMATE, VEGETATION, AND SOILS. 4 HOURS. Climatic types and climatic regions; factors that give order and logic to their areal distribution; biotic and edaphic types and regions in relation to climatic phenomena.

110. INTRODUCTION TO CULTURAL GEOGRAPHY. 4 HOURS. Geographic patterns created by man's efforts to survive within his environmental constraints; attention to man's origin, divergence, and convergence in historical perspective. Special reference to man himself and the manifestations on the earth's surface of his varied attitudes, objectives, and technical skills.

120. INTRODUCTION TO BEHAVIORAL GEOGRAPHY. 4 HOURS. Study of human behavior with respect to environmental qualities. A theoretical approach through psychogeography, ethnogeography, and cultural microgeography to examine how human beings in varying times and cultures come to understand, evaluate, and utilize the earth's surface. Models are developed to explain and help resolve a variety of man-environment problems, ranging from the earliest civilizations to the contemporary world.

130. INTRODUCTION TO ECONOMIC GEOGRAPHY. 4 HOURS. Man's utilization of the major economic resources of the world from the standpoint of geographic patterns and the exploitation of resources.

160. REGIONS AND NATIONS OF THE WORLD. 4 HOURS. Geographic structure of the world; regional patterns of settlement and land utilization of resources.

161. GEOGRAPHY OF ILLINOIS. 4 HOURS. Detailed regional study of the state; special emphasis on the cultural relations of Illinois to the rest of the nation. Prerequisite: One course in geography or consent of the instructor.

182. INTRODUCTION TO GEOGRAPHIC RESEARCH METHODS. 4 HOURS. Description, hypothesis testing, and theory formulation as major tools in geographic research; emphasis on useful analytical techniques. The fundamentals of sampling, statistics, probability, and data processing as applied to spatial problems.

185. BASIC MAPS AND GRAPHICS. 4 HOURS. Introductory course on the use of maps and other graphic materials. Demonstration and evaluation of slides, films, prints, models, and maps for teaching and other purposes.

199. FRESHMAN HONORS COURSE IN GEOGRAPHY. 2 HOURS. The basic applications of geography as a social and behavioral science. Subject matter varies, depending on request, need, and interest. Prerequisites: Freshman standing and James Scholar or other honors designation approved by the University Honors Programs.

201. REGIONAL GEOMORPHOLOGY. 4 HOURS. The variation of the earth's surface form in the United States and the related distributional aspects of geomorphic processes, vegetation, and soils. Readings and individual projects are required. Credit in Geography 101 is recommended.

203. REGIONAL CLIMATOLOGY. 4 HOURS. The world's climates; controls and distribution; problems of classification and regional analysis. Credit in Geography 103 is recommended.

208. MAN AND THE PHYSICAL ENVIRONMENT. 4 HOURS. Man's place in the world ecosystem is analyzed as an aspect of man-land relationships. Pollution of the physical environment is discussed in technical, social, and philosophical terms. Implications of environmental planning and control are reviewed. Group research projects and reports are required.

209. INTRODUCTION TO ASTRONOMY. 4 HOURS. Same as Physics 209. An introductory and essentially nonmathematical course for superior students who are not science majors. Prerequisite: Consent of the instructor.

210. SPATIAL ORGANIZATION IN SOCIAL AND CULTURAL GEOGRAPHY. 4 HOURS. Major geographic problems related to understanding spatial processes in relationship to social and cultural areas, landscapes, histories, and ecology. Credit in Geography 110 or 8 hours of anthropology, economics, history, political science, or sociology is recommended.

215. REGIONAL HISTORICAL GEOGRAPHY. 4 HOURS. Regional analysis of the effects of climate, soils, water bodies, and topography on the settlement of the continent; their relationship to present sectional differences; the correlation of history and geography is stressed. Credit in Geography 110 or 8 hours of anthropology, economics, history, political science, or sociology is recommended.

217. WORLD POLITICAL PATTERNS. 4 HOURS. World patterns of nations in relation to their natural environment; population and economic factors in world affairs; emphasis on regional concepts and problems of the non-Western world. Credit in Geography 110 or 8 hours of anthropology, economics, history, political science, or sociology is recommended.

220. MIND AND ENVIRONMENT. 4 HOURS. Models and theories concerning the relationship between psychological processes and the environment; major philosophical models, ancient and modern; major scientific theories developed in geography, psychology, anthropology, and other fields; new insights into the role of cognition and values in such aspects of environmental behavior as locational decision-making, geographic learning, and the ethics of conservation. Prerequisite: Geog 120 or 8 hours of geography and 4 hours of either anthropology or psychology.

226. MANAGEMENT AND CONSERVATION OF RESOURCES. 4 HOURS. Introduction to natural resource problems arising from the growth of population, change in taste and technology, and concern with the quality of the environment. Individual readings and projects. Credit in Geography 130 or 8 hours of anthropology, economics, history, political science, or sociology is recommended.

230. AREAL ORGANIZATION OF ECONOMIC ACTIVITIES. 4 HOURS. Models relating to the spatial elements of activities with application to urban and regional growth and development. Credit in Geography 130 or 8 hours of anthropology, economics, history, political science, or sociology is recommended.

231. AGRICULTURAL GEOGRAPHY. 4 HOURS. The nature of land utilization from the world, continental, and regional viewpoints; the types of agricultural land use, the interrelationship between areas of different types of land use. Credit in Geography 130 or 8 hours of anthropology, economics, history, political science, or sociology is recommended.

233. MANUFACTURING GEOGRAPHY. 4 HOURS. World distribution of manufacturing industries. The relative importance of industry in the major economies of the world; factors in the location of principal types of manufacturing; detailed analysis of selected industrial districts. Credit in Geography 130 or 8 hours of anthropology, economics, history, political science, or sociology is recommended.

235. GEOGRAPHIC ASPECTS OF TRANSPORTATION. 4 HOURS. Principles; world patterns of land, air, and sea transportation routes, facilities, and traffic; relations of transportation to regional development; selected problems in the geographic aspects of railway, highway, and pipeline transportation. Individual projects and reading. Credit in Geography 130 or 8 hours of anthropology, economics, history, political science, or sociology is recommended.

240. THE THIRD WORLD. 1 HOUR. The growth and development of the Third World viewed from an African, Asian, and Latin American perspective. Analysis of European imperialism in the colonial and neocolonial areas. The theory of development and the counter-theory of underdevelopment. Case studies from Puerto Rico, Mexico, South Africa, the Chicago ghetto, and elsewhere.

250. THE GEOGRAPHY OF CITIES. 4 HOURS. World cities and comparative urbanization. Intensive exposure to the development and pattern of urbanization; the growth of major integrating centers of political and economic power; the world cities. Credit in two upper-level systematic geography courses is recommended.

255. SETTLEMENT GEOGRAPHY. 4 HOURS. The spatial manifestations of man's attempts to survive in the preindustrial world; settlement patterns as the products of man's perceptions of his natural surroundings and the controls placed on their use by institutions. Problems of the contemporary rural portions of the earth. Credit in two upper-level systematic geography courses is recommended.

260. TOPICS IN THE GEOGRAPHY OF ANGLO-AMERICA. 4 HOURS. Discussions of selected geographic aspects of the principal human activities in each of the major regions of North America from the standpoint of their relations to the natural environment and to the other major regions. One Saturday field trip may be required.

262. TOPICS IN THE GEOGRAPHY OF THE CARIBBEAN AND MEXICO. 4 HOURS. Same as Latin American Studies 215. Discussions of selected geo-

graphic aspects of physical landscapes and the human cultural, economic, and political responses to them in Mexico, Central America, and the West Indies.

263. TOPICS IN THE GEOGRAPHY OF LATIN AMERICA. 4 HOURS. Same as Latin American Studies 216. Discussions of selected geographic aspects of regional geography, physical regions, people, economic resources, and political alignments.

264. TOPICS IN THE GEOGRAPHY OF WESTERN EUROPE. 4 HOURS. Discussions of selected geographic aspects of a regional analysis of the economic, social, and political development of people in relation to the location of Europe and its natural regions and the physical elements of land relief, climate, soil, and other natural resources.

265. TOPICS IN THE GEOGRAPHY OF THE USSR. 4 HOURS. Discussions of selected geographic aspects of physical and cultural landscapes; regional analysis of resources and economy; the geographic basis of the nation's role in world affairs.

266. TOPICS IN THE GEOGRAPHY OF EASTERN ASIA. 4 HOURS. Same as Asian Studies 240. Discussions of selected geographic aspects of physical and cultural landscapes of China, Japan, and Korea; physical regions, people, economy, and political alignments.

267. TOPICS IN THE GEOGRAPHY OF SOUTHERN AND SOUTHEASTERN ASIA. 4 HOURS. Same as Asian Studies 241. Discussions of selected geographic aspects of physical and cultural landscapes; physical regions, people, mineral wealth, agricultural production, manufacturing, trade, political alignments.

268. TOPICS IN THE GEOGRAPHY OF AFRICA SOUTH OF THE SAHARA. 4 HOURS. Discussions of selected geographic aspects of regional analysis of the relationship between natural resources, economic development, and the evolution of the many political units.

269. TOPICS IN THE GEOGRAPHY OF NORTH AFRICA AND THE MIDDLE EAST. 4 HOURS. Discussions of selected geographic aspects of human and physical spatial analysis of Saharan and Mediterranean Africa, the Levant, the Red Sea and Persian Gulf lands, including countries south of the Caspian Sea from Turkey to Baluchistan. Emphasis on population-resource problems and cultural conflict.

270. EDUCATIONAL PRACTICE WITH SEMINAR I. 8 HOURS. Same as Education 270. The first half of a two-segment sequence of practice teaching, including seminar, to meet certification requirements for teaching in the elementary or secondary school. Prerequisites: Ed 250, admission to advanced standing, and recommendation of the department of specialization.

271. EDUCATIONAL PRACTICE WITH SEMINAR II. 8 HOURS. Same as Education 271. The second half of a two-segment sequence of practice teaching, including seminar, to meet certification requirements for teaching in the elementary or secondary school. Prerequisites: Ed 250, credit or concurrent registration in Geog 270, admission to or continuation of advanced standing, and recommendation of the department of specialization.

280. FIELD GEOGRAPHY. 4 HOURS. Field techniques based on observation of physical and cultural landscapes of the Chicago metropolitan area, including northwestern Indiana, northern Illinois, and southern Wisconsin. Class field trips are conducted on selected Saturdays. Prerequisite: Declared geography major or consent of the instructor.

285. A PROBLEMATIC APPROACH TO CARTOGRAPHY. 4 HOURS. Introduction to the problems and practices of cartographic display of areal data. Topics include characteristics of maps, symbolization, and the introduction of some potentials for computer usage in map preparation. Prerequisite: Declared geography major or consent of the instructor.

286. MAP INTERPRETATION. 4 HOURS. Historical development of maps; survey of selected United States and foreign map series; evalution of map components; critical analysis of data portrayal schemes; methods of making measurements on maps. Prerequisite: Declared geography major or consent of the instructor.

287. AERIAL-PHOTO INTERPRETATION. 4 HOURS. The aerial photograph as a geographic research tool. Applications of data-gathering techniques to problems involving agriculture, ecology, forestry, geology, industry, pollution, and urban land use. Prerequisite: Declared geography major or consent of the instructor.

291. STUDENT-INITIATED COURSE IN GEOGRAPHY. 1 TO 4 HOURS. A special variable course desinged to meet specific needs not available in other course offerings. Approval of course topics and number of registrations required are decided by the head of the department. Prerequisite: Consent of the instructor.

299. SPECIAL STUDIES IN GEOGRAPHY. 2 TO 5 HOURS. May be repeated twice for a total of 10 hours. Readings and reports in selected fields chosen in consultation with the instructor. Prerequisite: Consent of the instructor.

301. ADVANCED LANDFORM GEOGRAPHY. 4 HOURS. The surficial processes modifying the earth's landforms; the controls over those processes and their regional settings. Prerequisites: Geog 100 and 201 or consent of the instructor.

303. PRINCIPLES OF CLIMATOLOGY. 4 HOURS. Climatology; macroclimatology and microclimatology; particular emphasis on fluxes of energy and mass at the interfaces between the earth's surface and the atmosphere. The environment and man, plants, and animals; special emphasis on urban microclimatological problems. Prerequisites: Geog 100 and 203 or consent of the instructor.

306. FUNDAMENTALS OF LANDFORM ANALYSIS. 3 HOURS. Theories of landform processes and techniques of analysis. Prerequisite: Geog 101 or GeolS 102 or consent of the instructor.

310. PRINCIPLES OF CULTURAL AREA ANALYSIS. 4 HOURS. Analysis and application of a wide variety of techniques developed to aid in defining, identifying, evaluating, and bounding world cultural areas. Special attention to techniques applicable to urban environments. Examination of development of areal cultural hierarchies through the diffusion mechanisms that create them. Prerequisites: Geog 100, 210.

311. GEOGRAPHY OF POPULATION. 4 HOURS. Broad treatment of the problems created by the changing distributions and numbers of the world's population. Emphasis on the relationships between population and resources; intensive study of the implications for both overpopulated and underpopulated world areas. Prerequisites: Geog 100, 210.

312. GEOGRAPHY OF RELIGIONS. 4 HOURS. Same as Religious Studies 312. Systematic treatment of geographical manifestations of the major religious sys-

tems of the world. Special attention to the geographical origins and dispersal mechanisms of religious systems and to the manner in which man organizes his life within the framework of his belief. Intensive study of applications being made in the geographical inquiry on religious systems. Prerequisites: Geog 100, 210.

315. PRINCIPLES OF HISTORICAL GEOGRAPHY. 4 HOURS. Development of an understanding of relating phenomena in space through time. Application of contemporary geographic research methodologies to geographically significant aspects of historic patterns and events. Prerequisites: Geog 100, 215.

320. ETHNOGEOGRAPHY. 4 HOURS. Cross-cultural analysis of environmental behavior and environmental cognition (ethnoscience), of the systems of resource-use in which these processes are imbedded, and of their relationship to cultural change and technological growth. Prerequisites: Anth 200 and Geog 220 or consent of the instructor.

326. DECISION-MAKING AND RESOURCE MANAGEMENT. 4 HOURS. The nature of decision-making schema in resource management; intensive study of approaches used in analyzing resource-management decisions; case studies are analyzed in terms of the reflected character of decisions and strategies, with emphasis on environmental hazards. Prerequisites: Geog 100, 226.

330. LOCATION THEORY AND SPATIAL ANALYSIS. 4 HOURS. Same as Economics 341. Spatial analysis in relation to theories of location of economic activity and regional development; theoretical systems; development and derivation of locational patterns of agricultural, manufacturing, and tertiary activities. Prerequisites: Geog 100 and one course from Geog 230, 231, 233, or Econ 120 and 8 hours of social sciences, or Mktg 360. Business administration students must have declared a major.

332. ECONOMIC DEVELOPMENT. 4 HOURS. Same as Economics 334. Basic problems and characteristics of underdeveloped countries; classical, neoclassical, and modern contributions to the theory of development; major proposals for accelerating development; basic approaches to economic development; laissez-faire, interventionism; role and methods of planning; foreign aid; economic integration. Prerequisite: Econ 319 or 320 or 321; or Econ 121, Geog 330. Business administration students must have declared a major.

333. URBAN ECONOMICS. 4 HOURS. Same as Economics 332. Survey of economic problems of cities; the nature and function of cities; the demand for and supply of housing and urban land; the implications of location theory for the spatial pattern of cities; the impact of government programs. Prerequisite: Econ 318 or 321 or Geog 330 or UPP 385. Business administration students must have declared a major.

334. REGIONAL ECONOMICS. 4 HOURS. Same as Economics 342. Theory of location of economic activity, land use patterns, systems of cities, the spatial pattern of city regions, regional growth dynamics, interregional transactions analysis, spatial mobility of factors, regional income differences, regional welfare and policy. Prerequisites: Econ 320 and either 319 or 321; or Geog 100, 230. Business administration students must have declared a major.

335. GEOGRAPHIC MODELING OF TRANSPORTATION SYSTEMS. 4 HOURS. Same as Economics 343. The principles of spatial interaction; emphasis on commodity flows and passenger movements, the practicality of network analysis, and the impact of transportation facilities on land use and regional development. Techniques include simulation and evaluation of existing transportation systems and solutions to theoretical transportation problems. Prerequisites: Geog 100 and 235 or Econ 120 and 8 hours of social sciences.

350. AREAL ORGANIZATION OF INTRAURBAN SYSTEMS. 4 HOURS. Same as Economics 344. Geographic aspects of intracity relationships. Topics include the city as a complex man-machine system and areal patterns of urban growth and development within the context of cross-sectional and longitudinal models. Prerequisites: One upper-division geographic research methods course, one two-course sequence in systematic geography, one course in either the Geography 250 or 360 series; or Geog 333. Business administration students must have declared a major.

351. AREAL ORGANIZATION OF INTERURBAN SYSTEMS. 4 HOURS. Geographic aspects of intercity relationships. Topics include patterns of intercity flows and development, continuous and hierarchical ordering of urban places, measurement of areal alignments, and the theoretical implications of different types of areal patterns. Prerequisites: One upper-division research methods course, one two-course systematic sequence, and one course in either the 250 or the 360 series.

361. PROBLEMS OF THE HUMID TROPICS. 4 HOURS. Natural and human aspects of tropical areas; problems of the humid environment relating to landforms, land use, resources, and economic and social phenomena and institutions; emphasis on the development potential of humid tropical lands. Individual research projects. Prerequisites: One upper-division research methods course, one two-course systematic sequence, and one course in either the 260 or the 350 series.

362. PROBLEMS OF ARID REGIONS. 4 HOURS. Natural and human aspects of arid areas; problems of the environment relating to landforms, land use, resources, and economic and social phenomena and institutions; emphasis on the development potential of arid lands. Individual research projects. Prerequisites: One upper-division research methods course, one two-course systematic sequence, and one course in either the 260 or the 350 series.

365. INTERREGIONAL EXCHANGE DYNAMICS. 4 HOURS. Spatial analysis of the economic, social, and political facts that have resulted from, and in, human and commodity flows among regions; special attention to the important relationships resulting from regional differences. Prerequisites: One upper-division research methods course, one two-course systematic sequence, and one course in either the 260 or the 350 series.

369. FIELD GEOGRAPHY OF SELECTED WORLD REGIONS. 12 HOURS. May be applied only once toward degree requirements. A full-term field course covering a selected geographic region of the world. Lectures, discussions, special readings, projects, and field work. Prerequisites: Geography majors: Geog 100, two 200-level systematic geography courses, and consent of the instructor; others: one year of upper-level social sciences courses and consent of the instructor.

370. THE LEARNING AND TEACHING OF GEOGRAPHY. 4 HOURS. A formal approach to instructional strategies in geography centered upon the known behavioral and learning characteristics of students. Strong emphasis on material presentation in contemporary urban schools. Prerequisites: Senior standing and declared major in teacher education.

381. GEOGRAPHIC INFORMATION SYSTEMS I. 4 HOURS. Same as Urban Planning and Policy 388. Problems encountered in the gathering and use of geographic data and the structuring of research in relation to existing relevant theory, measurement systems capabilities, and recognized objectives of research activities. Topics include review of data sources, methods of measurement, sampling models, and problems of dealing with aggregated reporting units, records

matching, and missing data. Prerequisites: Geog 100, 182 (or Math 117, or Soc 185, or QM 272), one 12-hour introductory geography sequence, and one 8-hour systematic geography sequence; or Geog 385, 386, or 387; or consent of the instructor.

382. GEOGRAPHIC INFORMATION SYSTEMS II. 4 HOURS. Application of inferential statistical techniques and probability models in geographic research. Topics include use of descriptive parameters in recognizing geographic relationships, tests of significance, and recognition of particular areal patterns. Prerequisite: Geog 381 or consent of the isntructor.

383. GEOGRAPHIC INFORMATION SYSTEMS III. 4 HOURS. Problems encountered in the management and portrayal of geographic data. Topics include preparation of data for manual and machine processing, data condensation and characterization, observation indexing, and the preparation of graphic and tabular displays. Prerequisite: Geog 382 or consent of the instructor.

385. THEMATIC CARTOGRAPHY. 4 HOURS. Discussion and experiments involving graphic representation of real-world areal patterns; preservation of geodetic and information properties; information generalization and reconstruction; semiotic problems and communications capabilities of mapped informational displays. Prerequisite: Geog 285.

386. INTRODUCTION TO AREAL PATTERNS. 4 HOURS. The characteristics and evaluation of selected real-world patterns. Application of the notions of randomness and interdependence to the problem of understanding certain of the physical and cultural processes affecting the arrangement of objects in the landscape. Prerequisites: Geog 286.

387. REMOTE SENSING OF THE ENVIRONNENT. 4 HOURS. Principles and practice in interpretation of aerial photographs, radar, and infrared imagery. Knowledge of elementary physics and geometry is recommended. Prerequisite: Geog 287 or consent of the instructor.

391. REVIEW OF GEOGRAPHIC THOUGHT AND RESEARCH METHODS. 4 HOURS. Introduction to the theory and techniques of geographic research; modern geographic philosophy; interpretative analysis of bibliographic sources and the preparation of a bibliography; preparation and evaluation of individual papers on selected topics. Prerequisites: Two two-course systematic sequences, one upper-division research methods course, one 300-level urban or regional course, and consent of the instructor.

Geological Sciences

Professors: Werner H. Baur, *Dr. rer. nat.*, Head of the Department; Robert E. DeMar, PhD; Richard B. McCammon, PhD; Edward J. Olsen, PhD (Adjunct).

Associate Professors: Warren C. Forbes, PhD; August F. Koster van Gross, PhD; Kelvin S. Rodolfo, PhD; Zubair A. Saleem, PhD; Norman D. Smith, PhD.

Assistant Professors: David W. Baker, PhD; John R. Bolt, PhD (Adjunct); Aijaz A. Khan, PhD.

Major—for the Bachelor of Science, 49-52 hours, distributed as follows:

Geological Sciences 101, 102, 103	15
200, 201, 215, 317	18-21
210 or 218	4
Additional advanced courses chosen with department approval	12

Required Prerequisite and Collateral Courses—45-57 hours, including:
Chemistry[1] 112, 113, 114
Mathematics[1] 130, 131, 132, 133
Physics courses chosen in consultation with the department adviser, usually Physics 101, 102, 103 or, for those students interested in geophysics, geochemistry and some other areas, 111, 112, 113

Departmental Distinction: To be recommended for graduation with Departmental Distinction in any of the programs of the Department of Geological Sciences a student must have a grade point average of 4.00 or better (exclusive of military science and physical education) and must perform creditably in Geological Sciences 299.

Minor—Students from other departments who wish to minor in geological sciences must take 27 hours, chosen with the approval of the department. A maximum of 18 hours may be at the 100 level. Geological Sciences 110 is usually required.

Teacher Education in the Earth Sciences: Requirements for Teaching in Secondary Schools

Major—for the Bachelor of Science, 49 to 55 hours, distributed as follows:
Geological Sciences 101, 102, 103
20 hours of advanced courses chosen with the advice of the department
6 to 12 hours in an approved summer field course
Geography 102, 103

Supporting Courses—39 to 40 quarter hours, distributed as follows:
Mathematics 130, 131
Physics—3 quarters
Chemistry 112, 113, 114 or the equivalent

Major requirements are somewhat flexible. In certain cases substitutions of courses in physics, chemistry, biology, mathematics, or geography may be made with approval of the department adviser. Geology 110 may be substituted for the summer field course with the consent of the department adviser provided 4 additional hours of advanced geology are taken. Students interested in this major should see an adviser from the Department of Geological Sciences during the first term of the freshman year.

Courses (GeolS)

101. PRINCIPLES OF GEOLOGY I. 5 HOURS. Analysis of the earth's surficial features; weathering and erosion, soils, groundwater, glaciers, streams, oceans and shorelines, deserts. One Saturday field trip is required. Fees for field trips are $3 per student per term.

1. Students who lack appropriate entrance credit must also take Mathematics 104 and 105 and Chemistry 111.

102. PRINCIPLES OF GEOLOGY II. 5 HOURS. The origin, age, and composition of the earth; introduction to rocks and minerals; metamorphism, magmatic evolution, isostasy, earthquakes, geophysical considerations of the earth's interior.

103. PRINCIPLES OF GEOLOGY III. 5 HOURS. Geologic history and evolution of the earth and its life; geosynclinal theory, uniformitarianism, methods of interpreting earth history. One Saturday field trip is required. Fees for field trips are $3 per student per term. Prerequisites: GeolS 101 and 102 or consent of the instructor.

110. FIELD WORK. 3 HOURS. Observation in the St. Francois Mountains and adjacent parts of Missouri and Illinois. Registration, winter quarter; two three-hour class meetings, held during spring vacation. Credit is given on completion of a satisfactory written report. Prerequisite: GeolS 102.

111. PRINCIPLES OF GEOLOGY. 1 HOUR. For honors students. May be taken three times, each time with concurrent registration in Geological Sciences 101, 102, or 103. Prerequisite: Concurrent registration in the honors section of GeolS 101, 102, 103 or consent of the instructor.

122. THE EVOLVING EARTH. 4 HOURS. May not be taken for credit by students who have credit in or are concurrently registered in Geological Sciences 101 or 102. Same as Natural Sciences 102. The first five to seven weeks introduce geological principles through examination of Chicago region geology. The remainder of the course expands one or more of the principles into a more specialized topic announced in the Timetable prior to each quarter. Two or three all-day Saturday field trips are required. Fees for field trips are $3 per student per term.

200. INTRODUCTION TO CRYSTALLOGRAPHY. 4 HOURS. Geometrical and optical crystallography. Crystal chemistry. Prerequisite: Credit or registration in Chem 112.

201. INTRODUCTION TO MINERALOGY. 4 HOURS. Structure, composition, occurence, and identification of important mineral groups. Optical mineralogy and identification of minerals by X-ray diffraction. Prerequisite: GeolS 200.

210. INTRODUCTION TO PETROLOGY. 4 HOURS. Structure, crystal chemistry, and identification of important groups. Discussion of rock-forming processes; emphasis on physical-chemical aspects. Prerequisites: GeolS 200 and credit or registration in Chem 113.

215. ANALYSIS OF SEDIMENTARY ROCKS. 4 HOURS. Survey of sedimentation processes; stratigraphic principles and methods of interpreting sedimentary rocks. Laboratories include flume, X-ray, and petrographic techniques used in analyzing sedimentary materials. Prerequisites: GeolS 200 and credit or registration in Chem 113.

218. INTRODUCTION TO PALEONTOLOGY. 4 HOURS. Same as Biological Sciences 218. The phylogeny, morphology, and ecology of fossils; emphasis on the invertebrates. Two or three Saturday field trips are required. Prerequisite: One year of biological sciences or GeolS 103 and consent of the instructor.

225. INTRODUCTION TO ENVIRONMENTAL GEOLOGY. 4 HOURS. Geological aspects of man's impact on environment; geobiocoenose, geologic hazards, earth's resources and processes, geological aspects of environmental health. Prerequisite: Two terms of any of the physical sciences or consent of the instructor.

230. INTRODUCTION TO OCEANOGRAPHY. 4 HOURS. May not be taken for credit by students with credit or concurrent registration in Geological Sciences 101. A physical description of the marine environment: physical and chemical properties of sea water; currents, wave action, tidal forces, geography and geology of the ocean basins. Relation of the marine organism to the physical environment. Prerequisite: Consent of the instructor.

235. ASTROGEOLOGY. 4 HOURS. Data and major theories of the origin and evolution of the universe, solar system, and earth; lunar geology, meteors and meteorites, artificial satellite data. Prerequisite: One year of a physical science or consent of the instructor.

250. EVOLUTION OF THE EARTH. 4 HOURS. May not be taken for credit by geological sciences majors. The earth's origin and the evolution of its major spheres and crustal features; continental drift, continental accretion, seafloor spreading, paleomagnetism, isostasy, mantle convection. Prerequisite: One year of either a physical science or mathematics.

299. INTRODUCTION TO RESEARCH. CREDIT TO BE ARRANGED. Independent study. Students who desire to register must present to the head of the department a written statement from the instructor under whom they are to work. Only those students who write a thesis are recommended for graduation with Departmental Distinction. Prerequisite: Consent of the instructor.

300. MINERALOGY. 4 HOURS. Crystal chemistry and phase equilibria of minerals and mineral assemblages. Prerequisites: Chem 114, GeolS 210.

310. IGNEOUS AND METAMORPHIC PETROLOGY. 4 HOURS. Discussion of petrogenesis; application of thermodynamic principles to the crystallization of rocks. Prerequisites: Chem 114, GeolS 210.

315. SEDIMENTOLOGY. 4 HOURS. Composition, texture, and structure of sediments and sedimentary rocks. Environmental factors that control sediment genesis. Theory and techniques of modern sedimentology. Prerequisites: Chem 114, GeolS 215, and credit or registration in Math 131.

316. INVERTEBRATE PALEONTOLOGY. 4 HOURS. Same as Biological Sciences 316. Phylogeny, morphology, and ecology of the fossil invertebrates. Prerequisites: GeolS 218 and consent of the instructor.

317. FIELD GEOLOGY. 6 TO 9 HOURS. Application of mapping and other field techniques at a summer field camp for a period of six weeks. Prerequisites: GeolS 110, 200, 210, and 320 or consent of the instructor.

318. VERTEBRATE PALEONTOLOGY. 4 HOURS. Same as Biological Sciences 318. Phylogeny, morphology, and ecology of the fossil vertebrates. Prerequisites: BioS 281 and consent of the instructor.

319. PALEOBOTANY. 5 HOURS. Same as Biological Sciences 319. Structure, phylogeny, and stratigraphic distribution of representative fossil plants. Lecture, laboratory, and field trips. Prerequisite: One year of biological sciences.

320. ANALYSIS OF GEOLOGIC STRUCTURES. 4 HOURS. Elementary stress and strain relations for earth materials. Nature and origin of folds and faults. Structural petrology. Deformation of the earth's crust. Prerequisites: Math 130 and credit or registration in Phys 101 or 111.

330. ENVIRONMENTAL GEOLOGY. 4 HOURS. Geological aspects of man's environment; emphasis on the earth's processes, resources, and physical properties

of rocks and soils insofar as they are important to, or in some way affect, human activities. Prerequisites: Credit or concurrent registration in Math 132 and GeolS 225 or consent of the instructor.

335. GEOCHEMISTRY. 4 HOURS. Principles of the distribution of the elements in the earth's crust. Element partitioning between coexisting minerals; origin of the elements. Introduction to thermodynamic considerations of mineral equilibria. Prerequisites: Chem 112, 113, and 114 or consent of the instructor.

337. ELECTRON MICROPROBE ANALYSIS. 4 HOURS. Principles and techniques. Prerequisite: Phys 114 or the equivalent or consent of the instructor.

340. ECONOMIC GEOLOGY OF MINERAL DEPOSITS. 4 HOURS. Principles of mineral deposition, exploration, and exploitation. Distribution of economic minerals. Prerequisites: GeolS 210 and 215 or consent of the instructor.

345. ADVANCED CRYSTALLOGRAPHY. 4 HOURS. Crystalline properties of minerals. Theory and practice of determining the crystalline structure of minerals. Prerequisite: GeolS 300.

350. HYDROGEOLOGY. 4 HOURS. The occurrence, storage, movement, and quality of water in rocks of the earth's crust. Prerequisite: Math 132.

355. GEOLOGY OF ENERGY RESOURCES. 4 HOURS. Introduction to the nature, origin, and distribution of fossil fuels in the earth's crust. Emphasis on the geology of petroleum and natural gas, coal, oil-shale and tar-sand, uranium, and geothermal desposits. Prerequisites: GeolS 215 and 320 or consent of the instructor.

360. INTRODUCTORY GEOPHYSICS. 4 HOURS. The shape and figure of the earth, gravity, seismology, and magnetism. Thermodynamics of the earth; atmospheric and planetary geophysics. Prerequisite: Consent of the instructor.

365. STATISTICAL METHODS IN GEOLOGY. 4 HOURS. Introductory course. Sampling from geological populations, statistical inference, and hypothesis testing; statistics of orientation data; trend surface methods; multivariate correlation techniques; time series analysis. Prerequisite: Math 370 or consent of the instructor.

370. ENGINEERING GEOLOGY. 4 HOURS. Applications of geology to major engineering problems and operations. Prerequisites: Math 132 and Phys 112 or consent of the instructor.

375. COMPUTER APPLICATIONS IN GEOLOGY. 4 HOURS. An introduction. Machine contouring, trend surface analysis, and spatial filtering. Graphic correlations, factor analysis, and classification systems. Simulation of geological processes, geologic sampling, and spatial variation. Prerequisite: Math 195 or consent of the instructor.

385. GEOPHYSICAL EXPLORATION. 4 HOURS. Introduction to methods of geophysical exploration. Interpretation of seismic data, gravity and magnetic anomalies, and electrical and electromagnetic surveys. Laboratory includes field investigations. Prerequisites: Math 133 and GeolS 360 or consent of the instructor.

390. TOPICS IN MODERN GEOLOGY. 4 HOURS. Discussion of current research topics. Prerequisites: Senior standing and 20 hours of advanced courses in geological sciences.

German

Professors: Robert R. Heitner, PhD, Head of the Department; Lee B. Jennings, PhD; Robert Kauf, PhD; Daniel C. McCluney, Jr., PhD (Emeritus); Karl F. Otto, Jr., PhD; Leroy R. Shaw, PhD; Elizabeth Teichmann, PhD (Emeritus); Hazel C. Vardaman, PhD.

Associate Professors: Heinz C. Christiansen, PhD; Arnold J. Hartoch, PhD; Ernest S. Willner, PhD.

Assistant Professors: James E. Dishington, PhD; John S. Groseclose, PhD; Rudolf A. Hofmeister, PhD; Dennis Q. Taylor, PhD; David M. Weible, PhD.

Instructors: Johanna Braunfeld, MA (Emeritus).

Major—for the Bachelor of Arts, a minimum of 48 hours, distributed as follows:
German 201, 202, 203, 204,
221, 290, 291, 294
Plus 16 hours chosen from among the following courses, including a minimum of 8 hours in advanced courses in literature (numbers italicized):
205, 206, 220, 230, 320, 321,
370, 372, 374, 380, 382, 385, *390*

Department Honors—Students who complete the major with a grade point average of 4.60 in the upper-division undergraduate courses are recommended for Department Honors with Distinction. Department Honors with High or Highest Distinction are awarded to students who, in addition, meet the requirements of German 298. The designation "High" or "Highest" is made by the department Honors Committee.

Minor—Students from other departments who wish to minor in German must take a minimum of 19 hours at the 200 level or above, selected with the approval of the Department of German.

Teacher Education in German: Requirements for Teaching in Secondary Schools

Major—for the Bachelor of Arts, 52 hours
German 201, 202, 203, 204,
206, 207, 220, 221,
230, 240, 290, 292,
294
1 additional 300-level course

Minor—32-33 hours
German 104 or 124
plus 8 hours chosen from 105, 106, 107,
108, 109, 110
plus 201, 202, 203
and 8 hours chosen from 204, 206, 207,
220, 221, 230, 240

Options for Completion of the Second Year of the Foreign Language Requirements

German 104 and any *two* from the series 105, 106, 107, 108, 109, 110, taken in any order.
German 124 and any *one* from the series 105, 106, 107, 108, 109, 110.

Overseas Program

A significant portion of the credits for the major in German may be earned through the Foreign Study Program conducted at Baden, Austria. Students who wish to be considered for this program must arrange to complete German 202 before departure in September 1977.

Awards and Prizes

Monetary awards and book prizes donated by local businesses and foreign consulates are given each year in May to German majors who have achieved distinction in their studies.

Courses (Ger)

100. ELEMENTARY GERMAN, SPECIAL COURSE. 4 HOURS. A one-term review course for students who have had high school German, but whose scores on the placement test indicate that their previous preparation is too weak for German 104 and too strong for German 101. Open also to transfer students who have had no more than one year of college German and whose scores on the placement test indicate that their previous preparation is too weak for German 104. This course is followed by German 104 and any two of German 105, 106, 107, 109, 110. Prerequisite: German placement test.

101. ELEMENTARY GERMAN I. 4 HOURS. Four class meetings per week, including film series and computer-assisted instruction. Introduction to and practice in speaking, listening, and reading.

102. ELEMENTARY GERMAN II. 4 HOURS. Continues German 101. Prerequisite: Ger 101 or 121 or the equivalent.

103. ELEMENTARY GERMAN III. 4 HOURS. Continues German 102. Prerequisite: Ger 102 or the equivalent.

104. INTERMEDIATE GERMAN. 4 HOURS. Training in reading skills and grammar. Prerequisite: Ger 100 or 103 or the equivalent.

105. NONFICTION READINGS: ENGLISH DISCUSSION. 4 HOURS. May be taken before or after any one of German 106, 107, 108, 109, or 110 in fulfillment of the foreign language requirement. Contemporary life and civilization. Prerequisite: Ger 104 or 124 or the equivalent.

106. LITERARY READINGS: GERMAN DISCUSSION. 4 HOURS. May be taken before or after any one of German 105, 107, 108, 109, or 110 in fulfillment of the foreign language requirement. Contemporary writers. Prerequisite: Ger 104 or 124 or the equivalent.

107. NONFICTION READINGS: GERMAN DISCUSSION. 4 HOURS. May be taken before or after any one of German 105, 106, 108, 109, or 110 in fulfillment of the foreign language requirement. Contemporary life and civilization. Prerequisite: Ger 104 or 124 or the equivalent.

108. LITERARY READINGS: ENGLISH DISCUSSION. 4 HOURS. May be taken before or after any one of German 105, 106, 107, 109, or 110 in fulfillment of the foreign language requirement. Contemporary writers. Prerequisite: Ger 104 or 124 or the equivalent.

109. READINGS IN THE HERITAGE OF GERMAN CULTURE AND HISTORY. 4 HOURS. May be taken before or after any one of German 105, 106, 107, 108, or 110 in fulfillment of the foreign language requirement. Discussions in English. Prerequisite: Ger 104 or 124 or the equivalent.

110. CONVERSATION. 4 HOURS. May be taken before or after any one of German 105, 106, 107, 108, or 109 in fulfillment of the foreign language requirement. Training in speaking skills; special emphasis on practical situations and traveler's vocabulary. Prerequisite: Ger 104 or 124 or the equivalent.

121. ELEMENTARY GERMAN I. 5 HOURS. Four class meetings per week. For students with above average language aptitude. An enriched sequence to satisfy the foreign language requirement. Introduction to and practice in speaking, listening, reading, and writing. Prerequisite: Satisfactory score on the Linguistic Aptitude Test. Prospective students must first register in German 101; the test is administered on the first class day.

122. ELEMENTARY GERMAN II. 5 HOURS. Continues German 121. Prereequisite: Ger 121 or 101 with a grade of A or approval of the department.

123. ELEMENTARY GERMAN III. 5 HOURS. Continues German 122. Prerequisite: Ger 122.

124. INTERMEDIATE GERMAN. 5 HOURS. Continues German 123. Prerequisite: Ger 123 or approval of the department.

185. MASTERPIECES OF GERMAN LITERATURE IN ENGLISH TRANSLATION. 4 HOURS. Not open to German majors. Same as Humanities 185.

189. TOPICS IN GERMAN LITERATURE IN TRANSLATION. 4 HOURS. May be repeated for a maximum of 12 hours of credit. Same as Humanities 189. Study of a prominent author or a group of related authors of a movement, period, idea, or genre. Topics are announced in the Timetable.

190. FRANZ KAFKA. 4 HOURS. Same as Humanities 190. Major works and short stories in English translation.

191. BERTOLT BRECHT. 4 HOURS. Same as Humanities 191. Major works in English translation.

192. HERMANN HESSE. 4 HOURS. Same as Humanities 192. Major works in English translation.

193. LOVE, WAR, AND THE OTHER WORLD: THE LITERATURE OF MEDIEVAL GERMANY IN TRANSLATION. 4 HOURS. Same as Humanities 193. Readings of representative works from the Middle Ages; special emphasis on the classical period. Knowledge of German is not required.

194. GUNTER GRASS AND HEINRICH BOLL. 4 HOURS. Same as Humanities 194. Their major works in English translation.

195. GOETHE'S WORKS IN TRANSLATION. 4 HOURS. Same as Humanities 195. *Faust* and other representative writings in English translation.

196. MAJOR WORKS OF SCHILLER IN ENGLISH TRANSLATION. 4 HOURS. Same as Humanities 196. Lectures and discussions on Schiller's dramas and esthetic treatises.

197. THOMAS MANN. 4 HOURS. Same as Humanities 197. Selected works in English translation.

198. CONTEMPORARY GERMAN PLAYS IN TRANSLATION. 4 HOURS. Same as Humanities 198. The abuse of power and depresonalization in twentieth-century society. Reading of Durrenmatt, Frisch, and other representative dramatists.

201. WRITING AND SPEAKING GERMAN I. 4 HOURS. Phonetics, grammar, syntax, vocabulary development; training in oral and written communication. Prerequisites: Any two of Ger 105, 106, 107, 108, 109, 110 or the equivalent.

202. WRITING AND SPEAKING GERMAN II. 4 HOURS. Continues German 201. Prerequisite: Ger 201 or the equivalent.

203. WRITING AND SPEAKING GERMAN III. 4 HOURS. Continues German 202. Prerequisite: Ger 202 or the equivalent.

204. WRITING AND SPEAKING GERMAN IV. 4 HOURS. Continues German 203. Prerequisite: Ger 203 or the equivalent.

205. BUSINESS GERMAN. 4 HOURS. Technological vocabulary and oral and written communication for business and industry. Practice in trade expressions and various stylistic features of business correspondence. Prerequisite: Ger 204 or the equivalent or approval of the department.

206. CORRECTIVE GERMAN PHONETICS. 1 HOUR. May be repeated once for credit. Pronunciation and intonation practice. Prerequisites: Any two of Ger 105, 106, 107, 108, 109, 110 or the equivalent.

207. GERMAN GRAMMAR FOR TEACHERS. 4 HOURS. Intensive study and review of problems of German grammar and syntax. Prerequisite: Ger 204 or the equivalent or consent of the instructor.

220. GERMAN CULTURE AND CIVILIZATION. 4 HOURS. Survey of the development of German culture from earliest times to the present: art, architecture, music, society. Lectures, selected readings, and slides. Prerequisites: Any two of Ger 105, 106, 107, 108, 109, 110 or the equivalent.

221. INTRODUCTION TO GERMAN LITERATURE. 4 HOURS. A linguistic and literary introduction to the various genres. Prerequisite: Any two of Ger 105, 106, 107, 108, 109, 110 or the equivalents or Ger 124 and any one of the German 105 through 110 series.

230. CONTRASTIVE APPLIED LINGUISTICS. 3 HOURS. German phonology, morphology, syntax, and semantics in comparison with English. Prerequisite: Ger 202 or the equivalent.

233. STUDENT-INITIATED COURSE. 1 TO 4 HOURS. May be repeated for credit. Topics vary and are determined by the student or students who also draw up the specific proposal, which is then considered by the faculty of the department. Prerequisites: Ger 290, 292, and 294 or the equivalents.

240. THE TEACHING OF GERMAN IN THE SECONDARY SCHOOL AND COLLEGE. 4 HOURS. Modern techniques, including the use of the language laboratory. Prerequisite: Ger 230.

250. GRAMMAR FOR READING AND TRANSLATION. 4 HOURS. Not open to German majors. May not be taken for credit by students who have completed the regular elementary and intermediate German language sequences. An accelerated course for beginners; designed to prepare students for reading examinations in German. Primarily for upper-division and graduate students in other departments. Reading of specialized texts in the humanities, social sciences, and natural sciences. Does not meet graduation requirements in foreign language.

251. TRANSLATION OF TECHNICAL PROSE. 4 HOURS. Does not satisfy the graduation requirement in foreign languages. May be counted toward the German major. Reading of specialized texts in the humanities, social studies, and sciences. Prerequisite: Ger 250. Also open to qualified students who have completed two years of German or the equivalent.

270. EDUCATIONAL PRACTICE WITH SEMINAR I. 8 HOURS. Same as Education 270. The first half of a two-segment sequence of practice teaching, including seminar, to meet certification requirements for teaching in the elementary or secondary school. Prerequisites: Ed 250, admission to advanced standing, and recommendation of the department of specialization.

271. EDUCATIONAL PRACTICE WITH SEMINAR II. 8 HOURS. Same as Education 271. The second half of a two-segment sequence of practice teaching, including seminar, to meet certification requirements for teaching in the elementary or secondary school. Prerequisites: Ed 250, credit or concurrent registration in Ger 270, admission to or continuation of advanced standing, and recommendation of the department of specialization.

290. MASTERWORKS OF GERMAN LITERATURE I. 4 HOURS. The classical period. Prerequisite: Ger 221 or the equivalent.

292. MASTERWORKS OF GERMAN LITERATURE II. 4 HOURS. Romanticism and poetic realism. Prerequisite: Ger 221 or the equivalent.

294. MASTERWORKS OF GERMAN LITERATURE III. 4 HOURS. From Naturalism to the present. Prerequisite: Ger 221 or the equivalent.

298. HONORS ESSAY. 4 HOURS. Restricted to German majors in their last year of work toward completion of the major. May not be taken in the term in which the student expects to graduate. Prerequisites: Ger 290, 292, 294 or the equivalents and at least a 4.60 average in all upper-division German courses previously taken.

299. INDEPENDENT STUDY. 1 TO 3 HOURS. May be repeated for credit. Open only to German majors and minors who are working on special projects. Prerequisites: Ger 106 or the equivalent and approval of the department.

320. WRITING AND SPEAKING GERMAN V. 4 HOURS. Prerequisite: Ger 204 or the equivalent.

321. WRITING AND SPEAKING GERMAN VI. 4 HOURS. Prerequisite: Ger 320 or the equivalent.

340. FOREIGN LANGUAGE COMPUTER-ASSISTED INSTRUCTION. 4 HOURS. Same as French 385, Slavic Languages and Literatures 340, and Spanish 375. Does not count toward the major. Basic introduction to the use of the TUTOR language and the PLATO IV system in foreign language instruction. Each student designs and implements an instructional module as a term project. Prerequisite: Completion of the intermediate level, or the equivalent, of either German, French, Spanish, or a Slavic language.

361. GERMAN ABROAD. 0 TO 15 HOURS. May be repeated for credit for a maximum of 45 hours. Taken in Austria. Lectures, seminars, and practical work in German language, literature, civilization, and teaching methods. Prerequisites: Ger 201 and 202 or the equivalents, 3.75 overall grade point average, and 4.00 average in German.

370. THE GERMAN *NOVELLE*. 4 HOURS. Reading and interpretation of representative *Novellen* of the nineteenth and twentieth centuries. Prerequisites: Ger 221 and two additional German literature courses or consent of the instructor.

372. GERMAN DRAMA. 4 HOURS. Development from the Enlightenment to the present. Prerequisites: Ger 221 and two additional German literature courses or consent of the instructor.

374. POETRY FROM THE SEVENTEENTH CENTURY TO THE PRESENT. 4 HOURS. Prerequisites: Ger 221 and two additional German literature courses or consent of the instructor.

380. GOETHE'S *FAUST*. 4 HOURS. Intensive study of Parts I and II. Prerequisites: Ger 221 and two additional German literature courses or consent of the instructor.

382. GERMAN LITERATURE TO 1750. 4 HOURS. Prerequisites: Ger 221 and two additional German literature courses or consent of the instructor.

385. GERMANIC LINGUISTICS. 4 HOURS. Linguistic geography, *Sprachschichten*, and principles of structural linguistics. Prerequisite: Ger 203 or the equivalent.

390. TOPICS IN GERMAN LITERATURE. 4 HOURS. May be taken more than once for credit. Reading and discussion of the work of one prominent German author or of a group of related authors. Subject varies and is chosen by the instructor. Prerequisites: Ger 290, 292, and 294 or consent of the instructor.

Greek. See Classics.

Hebraic Studies. See Judaic Studies.

History

Ronald P. Legon, PhD, Chairman of the Department.

Professors: Shirley A. Bill, PhD; Peter J. Coleman, PhD; Carolyn A. Edie, PhD; Bentley B. Gilbert, PhD; Robert L. Hess, PhD; Melvin G. Holli, PhD; Richard Jensen, PhD; Peter d'A. Jones, PhD; Stanley Mellon, PhD; Robert L. Nicholson, PhD; Robert V. Remini, PhD; Edward C. Thaden, PhD; John B. Wolf, PhD (Emeritus).

Associate Professors: Robert Conrad, PhD; James E. Cracraft, PhD; Gerald A. Danzer, PhD; William A. Hoisington, PhD; George Huppert, PhD; David P. Jordan, PhD; Ronald P. Legon, PhD; Peter R. McKeon, PhD; Richard Millman, PhD; Herman Ooms, PhD; Michael Perman, PhD; Leo Schelbert, PhD; Louis Unfer, PhD (Emeritus).

Assistant Professors: Burton J. Bledstein, PhD; Jon Butler, PhD; Bruce Calder, PhD; Perry Duis, PhD; Richard Fried, PhD; Richard J. Levy, PhD; Robert Messer, PhD; Marion S. Miller, PhD; James Sack, PhD; Daniel S. Smith, PhD; Ghada Talhami, PhD (Visiting); Mary K. Vaughan, PhD (Visiting).

Instructors: Karen Alvarez, BA; Charles Branham, BA; Eugene Costa, MA; LaRay Denzer, MA.

Lecturers: Nazaris DeVine, MA (Visiting); Lawrence King, PhD (Visiting); Hugo Leaming, BD (Visiting); Muriel Moulton, MA (Visiting).

Major—for the Bachelor of Arts, 48 hours, distributed as follows:

100-level courses	4-12 hours
200- and 300-level courses, including at least 12 hours of 300-level courses	36-44 hours

Single-field concentration of no less than 12 and no more than 20 hours within the first 48 hours of history is required.
Majors are advised by the undergraduate advising director and staff.

Departmental Distinction: A 4.50 all-University average and a 4.75 average in all courses taken in the Department of History at Chicago Circle.

Minor—Students from other departments who wish to minor in history must take a least 24 hours, including 4 hours of 100-level courses and a minimum of 8 hours of 300-level courses.

Teacher Education in History: Requirements for Teaching in Secondary Schools

Major—Requirements for the Bachelor of Arts in the Teaching of History are identical with those for the regular Bachelor of Arts in History. The Department of History does not require its teacher education majors to offer a minor field.

Courses (Hist)

100. INTRODUCTION TO WORLD HISTORY. 4 HOURS. May not be repeated for credit. Introduction to history and historical methods through the study of world history. Particular attention to the use of primary sources in reconstructing the past.

101. INTRODUCTION TO ANCIENT HISTORY. 4 HOURS. May not be repeated for credit. Introduction to history and historical methods through the study of ancient Near Eastern, Greek, and Roman history. Particular attention to the use of primary sources in reconstructing the past.

111. INTRODUCTION TO WESTERN EUROPEAN HISTORY. 4 HOURS. May not be repeated for credit. Introduction to history and historical methods through the study of aspects of Western European history from the Middle Ages to the present. Particular attention to the use of primary sources in reconstructing the past.

121. INTRODUCTION TO BRITISH HISTORY. 4 HOURS. May not be repeated for credit. Survey of certain aspects of British civilization in their historical setting.

131. INTRODUCTION TO EASTERN EUROPEAN HISTORY. 4 HOURS. May not be repeated for credit. Introduction to history and historical methods through the study of Russian, Balkan, and East Central European history. Particular attention to the use of primary sources in reconstructing the past.

141. INTRODUCTION TO AFRICAN HISTORY. 4 HOURS. May not be repeated for credit. Same as Black Studies 141. Introduction to history and historical methods through the study of African history. Particular attention to the use of primary sources in reconstructing the past.

151. INTRODUCTION TO AMERICAN HISTORY. 4 HOURS. May not be repeated for credit. Introduction to history and historical methods through the study of American history. Particular attention to the use of primary sources in reconstructing the past.

152. INTRODUCTION TO NATIVE AMERICAN HISTORY. 4 HOURS. Same as Native American Studies 152. Introduction to history and historical methods through the study of Native American history. Particular attention to the use of primary sources in reconstructing the past.

161. INTRODUCTION TO LATIN AMERICAN HISTORY. 4 HOURS. May not be repeated for credit. Same as Latin American Studies 161. Survey of certain aspects of Latin American civilization in their historical setting.

171. INTRODUCTION TO EAST ASIAN HISTORY. 4 HOURS. May not be repeated for credit. Same as Asian Studies 171. Introduction to history and historical methods through the study of East Asian history. Particular attention to the use of primary sources in reconstructing the past.

Note: 200- and 300-level courses are open to juniors, seniors, and those lower-division students who have taken 4 hours of 100-level history or have the consent of the instructor.

201. THE ANCIENT WORLD: PREHISTORY AND THE ANCIENT NEAR EAST. 4 HOURS. The progress of early man from food gathering to food production. The political, social, economic, religious, and intellectual development of the Near East from the Mesopotamian city-state and the Old Kingdom in Egypt to the creation of the Persian empire. Emphasis on tracing the cultural roots of Western man. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

202. THE ANCIENT WORLD: GREECE TO THE AGE OF ALEXANDER. 4 HOURS. Same as Classics 202. From the Neolithic period to the conquest of the Persian empire by Alexander the Great and the creation of the Hellenistic

world. Emphasis on political, social, economic, religious, and intellectual development and the contributions of the Greek *polis* to Western civilization. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

203. THE ANCIENT WORLD: THE ROMAN REPUBLIC. 4 HOURS. Same as Classics 203. Rome from its origins to the collapse of the Roman Republic in the second half of the first century BC. Emphasis on the transformation from a city-state into a world empire and the effects of this change on every phase of Roman life. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

204. THE ANCIENT WORLD: THE ROMAN EMPIRE. 4 HOURS. Same as Classics 204. Rome from the principate of Augustus to the collapse of the western half of the empire. Emphasis on the political, administrative, social, and economic organization of the empire and the cultural impact and legacy of Roman civilization around the entire Mediterranean basin. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

205. MONUMENTS AND INSTITUTIONS OF ATHENS. 4 HOURS. Same as Classics 280. The monuments of Athens as they relate to the political and social institutions of the fifth century BC. Prerequisite: Junior or senior standing.

206. THE MIDDLE AGES FROM 400 TO 814. 4 HOURS. Europe from the time of the barbarian invasion to the death of Charlemagne. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

207. THE MIDDLE AGES FROM 814 TO 1250. 4 HOURS. Europe from the death of Frederick II. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

208. THE MIDDLE AGES FROM 1250 TO 1500. 4 HOURS. Europe from the rise of the towns to the establishment of national monarchy. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

211. THE AGE OF DISCOVERY: ORIGINS OF THE MODERN WESTERN WORLD I. 4 HOURS. The first in a three-course sequence usually beginning in the fall quarter. The dissolution of medieval society and culture from the late fifteenth to the early seventeenth centuries. Topics include the invention of printing, Protestantism, modern science and technology, and the modern state. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

212. THE SPLENDID CENTURY: ORIGINS OF THE MODERN WESTERN WORLD II. 4 HOURS. Continues History 211. The consolidation during the seventeenth century of earlier trends. Capitalism and bureaucracy in the context of unchanging agrarian life. The high culture of Paris, London, and Amsterdam is contrasted with the traditional mentality of village life. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

213. THE OLD REGIME: ORIGINS OF THE MODERN WESTERN WORLD III. 4 HOURS. The momentous transformations of Western European economy and society and the call for reform found in the writings of eighteenth-century philosophers. Analysis of the mood and setting that attended the industrial, commercial, social, and political revolutions of the eighteenth century. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

214. EUROPE: 1815 TO 1870. 4 HOURS. From the Congress of Vienna to the Franco-Prussian War. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

215. EUROPE: 1870 TO 1919. 4 HOURS. From the Franco-Prussian War to World War I. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

216. EUROPE: 1919 TO 1945. 4 HOURS. Social, economic, and political problems of the period. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

217. EUROPE: 1945 TO THE PRESENT. 4 HOURS. Europe since World War II: the reconstruction of political parties, the "cold war," the quest for European unity, the "German question," European society and demographic changes. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

218. GERMAN HISTORY FROM 1618 TO 1740. 4 HOURS. The Thirty Years War; its political, economic, and social effects on German public life. The rise of absolutism, the decline of the Reich, economic reconstruction and cameralism, the changing structure of social relationships. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

219. GERMAN HISTORY FROM 1740 TO 1848. 4 HOURS. The rise of Prussia and Austro-Prussian dualism; enlightened absolutism in Germany; Germany in the revolutionary period; the rise of political ideologies and middle-class culture; the revolutions of 1848. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

220. MODERN GERMANY FROM 1848 TO THE PRESENT. 4 HOURS. Germany's political, economic, and social reaction to the problems of national unification, industrialism, liberalism, world-power status, and rejuvenation after the loss of that status in World War I and World War II. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

221. MEDIEVAL ENGLAND. 4 HOURS. From the Celtic immigration to the accession of Henry VII. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

222. TUDOR-STUART ENGLAND. 4 HOURS. England during the reigns of the Tudors and the Stuarts. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

223. MODERN BRITAIN. 4 HOURS. From the accession of the Hanoverians to the present. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

224. HISTORY OF FRANCE FROM 1715 TO 1815. 4 HOURS. The origin of the French Revolution, the revolution itself, and its spread throughout Europe. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

225. DEVELOPMENT OF MODERN FRANCE FROM 1815 TO 1914. 4 HOURS. The major political and socioeconomic forces at work in French history from the fall of Napoleon to World War I. The uniqueness and the universality of the French experience are stressed. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

226. DEVELOPMENT OF MODERN FRANCE FROM 1914 TO THE PRESENT. 4 HOURS. The major political and socioeconomic forces at work in French history from World War I to Charles de Gaulle's Fifth Republic. The uniqueness and the universality of the French experience are stressed. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

227. HISTORY OF SPAIN FROM 1500 TO 1715. 4 HOURS. Same as Latin American Studies 227. The political, socieoeconomic, and cultural development of Imperial Spain from Ferdinand to the War of the Spanish Succession. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

228. HISTORY OF SPAIN FROM 1715 TO 1939. 4 HOURS. Same as Latin American Studies 228. The Englightenment; Spanish national integration and sociopolitical polarization; the Civil War. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

229. ITALIAN HISTORY FROM 1815 TO 1870. 4 HOURS. The impact of the French Revolution, the *Risorgimento*, the creation of the Italian nation-state, and the early years of the kingdom of Italy. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

230. ITALIAN HISTORY FROM 1870 TO THE PRESENT. 4 HOURS. Development of the Italian national state; political, social, and economic problems before World War I, the church-state relationship, colonial ambitions, the facist corporate state, the Italian republic since World War II. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

231. HISTORY OF THE BYZANTINE CIVILIZATION FROM 330 TO 1054. 4 HOURS. The cultural, religious, and social history of the Eastern Roman Empire from the founding of Constantinople to 1054. Special attention to the continuation of classic ideals and Byzantine relations with the Latin West and the Slavic, especially the Russian, worlds. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

232. HISTORY OF THE BYZANTINE CIVILIZATION FROM 1054 TO 1453. 4 HOURS. The cultural, religious, and social history of the Eastern Roman Empire from 1054 to the fall of Byzantium. Special attention to the continuation of classic ideals and byzantine relations with the Latin West and the Slavic, especially the Russian, worlds. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

233. HISTORY OF EAST CENTRAL EUROPE AND THE BALTIC REGION SINCE THE RENAISSANCE. 4 HOURS. The political, social, economic, and cultural development of Austria, Estonia, Hungary, Latvia, Lithuania, Poland, and the Czechoslovak lands from the Renaissance to the present. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

234. HISTORY OF THE BALKANS SINCE 1453. 4 HOURS. The political, social, economic, and cultural development of Albania, Bulgaria, Greece, Rumania, and Yugoslavia from the Ottoman conquest to the present. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

235. RUSSIA FROM THE EARLIEST TIMES TO PETER THE GREAT. 4 HOURS. The Russian people, state, and culture from their origins to the death of Peter the Great in 1725. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

236. IMPERIAL RUSSIA. 4 HOURS. Political, diplomatic, intellectual, and social developments in the Russian Empire from the death of Peter the Great to the Revolution of 1905. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

237. THE RUSSIAN REVOLUTION AND THE SOVIET UNION. 4 HOURS. Russian and Soviet political, diplomatic, ideological, economic, social, and cultural developments during the Duma period, World War I, the Russian Revolution and war, communism, the NEP, and the Five-Year Plan. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

241. AFRICAN HISTORY TO 1640. 4 HOURS. Same as Black Studies 241. Development of human civilization; the rise of kingdoms and territorial states; migration of peoples; the spread and impact of Islam; the imposition of Portuguese and Omani empires. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

243. AFRICAN HISTORY: 1640 TO 1881. 4 HOURS. Same as Black Studies 243. The nature of European influence in Africa; trading networks, the rise of kingdoms in the West African forest, the south-central savanna, and the southeastern coast; jihad movements; the development of indigenous African empires. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

245. AFRICAN HISTORY: 1881 TO THE PRESENT. 4 HOURS. Same as Black Studies 245. The effect of European partition and colonialism on African peoples; African military and political resistance movements; the rise of nationalism; the problems of independence. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

250. HISTORY OF NATIVE AMERICANS IN THE UNITED STATES. 4 HOURS. Same as Native American Studies 250. Dynamics of Native American and white cultural contact from white settlement to the present. Prerequisite: 4 hours of history at the 100 level or junior standing or approval of the department.

251. HISTORY OF THE UNITED STATES TO 1816. 4 HOURS. From colony to nationhood: European foundations, colonial development, independence, and early nationhood. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

252. HISTORY OF THE UNITED STATES FROM 1816 TO 1898. 4 HOURS. America in the nineteenth century: Jacksonian democracy, changing issues and parties, sectionalism, the Civil War and Reconstruction, the consequences of the industrial revolution. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

253. HISTORY OF THE UNITED STATES SINCE 1898. 4 HOURS. The emergence of the United States as a world power. World Wars I and II, problems of economic and social change in modern times, the cold war. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

254. HISTORY OF ILLINOIS. 4 HOURS. Survey of social, economic, and political history from 1818 to the present. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

255. NINETEENTH-CENTURY CHICAGO. 4 HOURS. The evolution of Chicago from frontier outpost to modern metropolis; economic, social, political, and cultural changes and institutions. Prerequisite: 4 hours of history or consent of the instructor.

256. TWENTIETH-CENTURY CHICAGO. 4 HOURS. Chicago since the turn of the century; economic, social, political, and cultural changes and institutions in Chicago and the metropolitan area. Prerequisite: 4 hours of history or consent of the instructor.

257. AFRO-AMERICAN HISTORY TO 1850. 4 HOURS. Same as Black Studies 257. African origins of the American Black population; the slave trade and the African diaspora in the Western Hemisphere; the origins and development of American slavery. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

258. AFRO-AMERICAN HISTORY FROM 1850 TO 1900. 4 HOURS. Same as Black Studies 258. Black abolitionism; emancipation; Reconstruction; the growth of Black institutions; the origins of racial segregation; pretwentieth-century migration movements. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

259. AFRO-AMERICAN HISTORY SINCE 1900. 4 HOURS. Same as Black Studies 259. Urbanization and the emergence of the Black ghetto; the various strategies of the civil rights movement; Black nationalism and Black power. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

261. COLONIAL LATIN AMERICA. 4 HOURS. Same as Latin American Studies 261. Iberian discovery, conquest, and settlement of America; the establishment of Spanish and Portuguese institutions; social, economic, political, and cultural development in colonial societies from conquest to independence. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

262. LATIN AMERICA IN THE NINETEENTH CENTURY. 4 HOURS. Same as Latin American Studies 262. The independence of Latin America and establishment of the new nations. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

263. MODERN LATIN AMERICA. 4 HOURS. Same as Latin American Studies 263. The Latin American nations in the twentieth century; their social. economic, political, and cultural development and their struggles for modernization. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

264. COLONIAL MEXICO. 4 HOURS. Same as Latin American Studies 264. The Indian background of Mexico, the Spanish conquest, the amalgamation of Spanish and indigenous cultures, and the evolution of Mexican economic, religious, social, and political institutions under Spanish domination until 1821. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

265. THE MEXICAN NATION FROM 1821 TO 1910. 4 HOURS. Same as Latin American Studies 265. Social, economic, political, and cultural development from independence to the fall of Porfirio Diaz. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

266. MEXICO SINCE 1910. 4 HOURS. Same as Latin American Studies 266. The Mexican Revolution and the development of the modern nation. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

267. THE ESTABLISHMENT OF THE BRAZILIAN NATION: 1500 TO 1850. 4 HOURS. Same as Latin American Studies 267. Portuguese discovery, set-

tlement, and exploitation of Brazil during three centuries; creation of the Brazilian nation through an amalgamation of races and cultures in a plantation and mining economy; the establishment and consolidation of independence. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

268. MODERN BRAZIL FROM 1850 to the Present. 4 HOURS. Same as Latin American Studies 268. The empire of Pedro II, the antislavery struggle, the Conservative republic, the Vargas era, social and cultural development, and the struggle for democracy and modernization. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

271. HISTORY OF CHINA AND JAPAN I. 4 HOURS. Same as Asian Studies 201. Topical survey of premodern China from earliest times to AD 1800: political philosophy, administrative systems, religion, social life. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

272. HISTORY OF CHINA AND JAPAN II. 4 HOURS. Same as Asian Studies 202. Premodern Japan from earliest times to AD 1868: political institutions, ideology, religion, cultural life. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

273. HISTORY OF CHINA AND JAPAN III. 4 HOURS. Same as Asian Studies 203. Nineteenth- and twentieth-century modern China and Japan: response to the West, modernization, intellectual, social, and political developments. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

281. HISTORY OF ARGENTINA. 4 HOURS. Same as Latin American Studies 281. The position of Argentina in the Spanish empire; analysis of independence movements; consolidation of export-oriented economy and elites; growth of middle sectors and labor movements; the Peron era; sociopolitical conflict and economic stagnation from 1955 to the present. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

283. HISTORY OF CHILE. 4 HOURS. Same as Latin American Studies 283. Spanish conquest and Indian resistance, the role of Chile in the Spanish empire, the nature of independence movements, consolidation of landed oligrachy, and formation of export economy. Emergence of the middle sectors and labor movement in the twentieth century within the context of underdevelopment. Popular Unity government and military coup. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

287. HISTORY OF PUERTO RICO I. 4 HOURS. Same as Latin American Studies 287. Survey of the socioeconomic, political, racial, and cultural history of Puerto Rico from the Indian period to the *Grito de Lares* (1868). Prerequisite: 4 hours of history or consent of the instructor.

288. HISTORY OF PUERTO RICO II. 4 HOURS. Same as Latin American Studies 288. Survey of the socioeconomic, political, racial, and cultural history of Puerto Rico from the *Grito de Lares* (1868) to the present. Prerequisite: Hist 287 or consent of the instructor.

289. HISTORY OF THE MEXICAN PEOPLE IN THE UNITED STATES OF AMERICA. 4 HOURS. Same as Latin American Studies 289. The political, social, economic, and cultural development of the Mexican people from the Mediterranean and Mesoamerican roots to the independence of Texas. Prerequisite: 4 hours of history or junior standing or consent of the instructor.

294. HISTORY OF EDUCATION IN WESTERN CIVILIZATION. 4 HOURS. History of education from antiquity to the present in relation to social, political, and religious influences; development of education and educational institutions in the context of factors in European history that affected conceptions of learning and teaching; tensions between different ideals of learning and their influence on schools and curricula. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

295. THE TEACHING OF HISTORY AND RELATED DISCIPLINES. 4 HOURS. Introduction to source material and historical literature relevant to the teaching of history and related disciplines in the secondary school; basic concepts and major themes of historical interpretation. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

296. HISTORY OF MINORITIES IN THE UNITED STATES: COLONIAL PERIOD THROUGH RECONSTRUCTION. 4 HOURS. Same as Black Studies 296 and Latin American Studies 296. Racial, ethnic, religious, and political minorities in the United States. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

297. HISTORY OF MINORITIES IN THE UNITED STATES: RECONSTRUCTION TO THE PRESENT. 4 HOURS. Same as Black Studies 297 and Latin American Studies 297. Racial, ethnic, religious, and political minorities in the United States. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

299. INDIVIDUAL STUDY: SPECIAL TOPICS. 2 TO 5 HOURS. May be taken only once for 2 to 5 hours of general education credit but may be repeated for credit for a maximum of 18 hours. However, without the specific approval of the department, no more than 5 hours in the same term may be taken under the direction of the same instructor, and no more than a total of 12 hours may be taken in the same term. Selected topics in history for individual study. Prerequisite: Consent of the instructor.

302. TOPICS IN GREEK HISTORY. 4 HOURS. May be repeated for credit. Specific topics are announced each term. Prerequisite: 4 hours of ancient history or consent of the instructor.

303. TOPICS IN ROMAN HISTORY. 4 HOURS. May be repeated for credit. Specific topics are announced each term. Prerequisite: 4 hours of ancient history or consent of the instructor.

306. TOPICS IN MEDIEVAL HISTORY. 4 HOURS. May be repeated for credit. Specific topics are announced each term. Prerequisite: 4 hours of medieval history or consent of the instructor.

309. TOPICS IN THE RENAISSANCE. 4 HOURS. May be repeated for credit. Specific topics are announced each term. Prerequisite: 4 hours of European history or consent of the instructor.

311. TOPICS IN SIXTEENTH-CENTURY EUROPEAN HISTORY. 4 HOURS. May be repeated for credit. Specific topics are announced each term. Prerequisite: 4 hours of European history or consent of the instructor.

312. TOPICS IN SEVENTEENTH-CENTURY EUROPEAN HISTORY. 4 HOURS. May be repeated for credit. Specific topics are announced each term. Prerequisite: 4 hours of European history or consent of the instructor.

313. TOPICS IN EIGHTEENTH-CENTURY EUROPEAN HISTORY. 4 HOURS. May be repeated for credit. Specific topics are announced each term. Prerequisite: 4 hours of European history or consent of the instructor.

314. TOPICS IN NINETEENTH-CENTURY EUROPEAN HISTORY. 4 HOURS. May be repeated for credit. Specific topics are announced each term. Prerequisite: 4 hours of European history or consent of the instructor.

316. TOPICS IN TWENTIETH-CENTURY EUROPEAN HISTORY. 4 HOURS. May be repeated for credit. Specific topics are announced each term. Prerequisite: 4 hours of European history or consent of the instructor.

318. TOPICS IN GERMAN HISTORY. 4 HOURS. May be repeated for credit. Specific topics are announced each term. Prerequisite: 4 hours of European history or consent of the instructor.

321. TOPICS IN BRITISH HISTORY. 4 HOURS. May be repeated for credit. Specific topics are announced each term. Prerequisite: 4 hours of Europeam history or consent of the instructor.

324. TOPICS IN FRENCH HISTORY. 4 HOURS. May be repeated for credit. Specific topics are announced each term. Prerequisite: 4 hours of European history or consent of the instructor.

329. TOPICS IN ITALIAN HISTORY. 4 HOURS. May be repeated for credit. Specific topics are announced each term. Prerequisite: 4 hours of European history or consent of the instructor.

333. TOPICS IN EASTERN EUROPEAN HISTORY. 4 HOURS. May be repeated for credit. Specific topics are announced each term. Prerequisite: 4 hours of European history or consent of the instructor.

335. TOPICS IN RUSSIAN HISTORY. 4 HOURS. May be repeated for credit. Specific topics are announced each term. Prerequisite: 4 hours or European history or consent of the instructor.

341. TOPICS IN AFRICAN HISTORY. 4 HOURS. Same as Black Studies 341. Study in depth of specific problems of internal African history, with concentration on such topics as the African role in the slave trade, the growth and decline of African states, African syntheses with European culture, or the African reaction to European domination and conquest. Prerequisite: 4 hours of African history.

349. AFRICAN HISTORY SEMINAR ABROAD. 8 TO 16 HOURS. Same as Black Studies 349. Lectures, seminars, and independent study in Africa for one term. Prerequisites: 8 hours of African history and consent of the instructor.

351. TOPICS IN COLONIAL AMERICAN HISTORY. 4 HOURS. May be repeated for credit. Specific topics are announced each term. Prerequisite: 4 hours of United States history or consent of the instructor.

352. TOPICS IN REVOLUTIONARY AND EARLY NATIONAL UNITED STATES HISTORY. 4 HOURS. May be repeated for credit. Specific topics are announced each term. Prerequisite: 4 hours of United States history or consent of the instructor.

353. TOPICS IN NINETEENTH-CENTURY UNITED STATES HISTORY. 4 HOURS. May be repeated for credit. Specific topics are announced each term. Prerequisite: 4 hours of United States history or consent of the instructor.

354. TOPICS IN TWENTIETH-CENTURY UNITED STATES HISTORY. 4 HOURS. May be repeated for credit. Specific topics are announced each term. Prerequisite: 4 hours of United States history or consent of the instructor.

355. TOPICS IN THE HISTORY OF CHICAGO. 4 HOURS. May be repeated for credit. Specific topics are announced each term. Prerequisite: Hist 255 or 256 or consent of the instructor.

361. TOPICS IN LATIN AMERICAN HISTORY. 4 HOURS. May be repeated for credit. Same as Latin American Studies 361. Specific topics are announced each term. Prerequisite: 4 hours of history or consent of the instructor.

371. TOPICS IN EAST ASIAN HISTORY. 4 HOURS. May be repeated for credit. Same as Asian Studies 301. Specific topics are announced each term. Prerequisite: 4 hours of East Asian history or consent of the instructor.

380. TOPICS IN ECONOMIC HISTORY. 4 HOURS. May be repeated for credit. Specific topics are announced each term. Prerequisite: 4 hours of history or consent of the instructor.

381. TOPICS IN SOCIAL HISTORY. 4 HOURS. May be repeated for credit. Specific topics are announced each term. Prerequisite: 4 hours of history.

382. TOPICS IN MIGRATION HISTORY. 4 HOURS. May be repeated for credit. Specific topics are announced each term. Prerequisite: 4 hours of history.

383. TOPICS IN THE HISTORY OF PUBLIC POLICY. 4 HOURS. May be repeated for credit. Specific topics are announced each term. Prerequisite: 4 hours of United States history or consent of the instructor.

386. TOPICS IN RACE, ETHNIC, AND MINORITY HISTORY. 4 HOURS. May be repeated for credit. Specific topics are announced each term. Prerequisite: 4 hours of history or consent of the instructor.

388. TOPICS IN EARLY URBAN HISTORY. 4 HOURS. May be repeated for credit. Specific topics are announced each term. Prerequisite: 4 hours of history or consent of the instructor.

389. TOPICS IN LATER URBAN HISTORY. 4 HOURS. May be repeated for credit. Specific topics are announced each term. Prerequisite: 4 hours of history.

390. TOPICS IN DIPLOMATIC HISTORY. 4 HOURS. May be repeated for credit. Specific topics are announced each term. Prerequisite: 4 hours of history or consent of the instructor.

391. TOPICS IN CONSTITUTIONAL HISTORY. 4 HOURS. May be repeated for credit. Specific topics are announced each term. Prerequisite: 4 hours of history or consent of the instructor.

392. TOPICS IN INTELLECTUAL HISTORY. 4 HOURS. May be repeated for credit. Specific topics are announced each term. Prerequisite: 4 hours of history or consent of the instructor.

393. TOPICS IN THE DEVELOPMENT OF HISTORICAL LITERATURE. 4 HOURS. May be repeated for credit. Specific topics are announced each term. Prerequisite: 4 hours of history or consent of the instructor.

394. TOPICS IN POLITICAL HISTORY. 4 HOURS. May be repeated for credit. Specific topics are announced each term. Prerequisite: 4 hours of history.

395. TOPICS IN RELIGIOUS HISTORY. 4 HOURS. May be repeated for credit. Same as Religious Studies 395. Specific topics are announced each term. Prerequisite: 4 hours of history or consent of the instructor.

397. TOPICS IN THE HISTORY OF TECHNOLOGY. 4 HOURS. May be repeated for credit. Specific topics are announced each term. Prerequisite: 4 hours of history or consent of the instructor.

Humanities. See Additional Courses.

Italian. See Spanish, Italian, and Portuguese.

Japanese. See Additional Courses.

Judaic Studies

The major in Juadaic Studies is a cooperative program offered by the University in conjunction with the Spertus College of Judaica.

The Bachelor of Arts is awarded to students who fulfill the general University and the College of Liberal Arts and Sciences graduation requirements and successfully complete the curriculum in Judaic studies. The curriculum affords study in five areas and an option for either a general major or a specialization in Hebrew language and literature.

Major—54 hours exclusive of 100-level courses.

General Major
18 hours in each of three from these five areas: Hebrew language and literature (Hebrew 204-216; 355); Bible (Judaic Studies 218-238; 350); Talmud (Judaic Studies 240-255; 376); history (Judaic Studies 260-282; 370, 373); ethics and thought (Judaic Studies 283-298; 353).

Specialization in Hebrew Language and Literature
36 hours of Hebrew language and literature beyond the 100 level (Hebrew 204-216; 355); 9 hours in each of two from these five areas: Bible (Judaic Studies 218-238; 350); Talmud (Judaic Studies 240-255; 376); history (Judaic Studies 260-282; 370, 373); ethics and thought (Judaic Studies 283-298; 353).

Required Prerequisite Courses
Hebrew 101-106 or the equivalent.

Minor—Students from other departments who wish to minor in Judaic studies must take Hebrew 101-106 (or equivalent) and 9 hours in each of three areas for a total of 27 hours beyond Hebrew 106.

Courses

Hebraic Studies (Heb)

101. ELEMENTARY HEBREW I. 4 HOURS. For students who have not studied Hebrew. Grammar, pronunciation, reading, composition, and conversation.

102. ELEMENTARY HEBREW II. 4 HOURS. Continues Hebraic Studies 101. Prerequisite: Heb 101 or the equivalent.

103. ELEMENTARY HEBREW III. 4 HOURS. Continues Hebraic Studies 102. Prerequisite: Heb 102 or the equivalent.

104. INTERMEDIATE HEBREW I. 4 HOURS. Rapid reading of modern authors and Israeli newspapers. Syntax and composition; conversational practice. Prerequisite: Heb 103 or the equivalent.

105. INTERMEDIATE HEBREW II. 4 HOURS. Continues Hebraic Studies 104. Prerequisite: Heb 104 or the equivalent.

106. INTERMEDIATE HEBREW III. 4 HOURS. Continues Hebraic Studies 105. Prerequisite: Heb 105 or the equivalent.

204. HEBREW LITERATURE AND COMPOSITION I. 3 HOURS. Orientation in varieties of language; grammatical forms and idioms in Hebrew prose and poetry. Selections from modern Hebrew literature with emphasis on linguistic analysis. Prerequisite: Heb 106 or the equivalent.

205. HEBREW LITERATURE AND COMPOSITION II. 3 HOURS. Continues Hebraic Studies 204. Prerequisite: Heb 204 or the equivalent.

206. HEBREW LITERATURE AND COMPOSITION III. 3 HOURS. Continues Hebraic Studies 205. Prerequisite: Heb 205 or the equivalent.

207. MODERN HEBREW LITERATURE. 3 HOURS. May be repeated for credit. From the beginning of the twentieth century to 1940.

208. MODERN HEBREW PROSE. 3 HOURS. May be repeated for a total of 6 hours of credit. Short works on various subjects and in various styles. Social and cultural backgrounds of the authors.

209. MEDIEVAL HEBREW POETRY. 3 HOURS. Hebrew poetry of medieval Spain. Emphasis on the of Samuel Ha-Nagid, Solomon Ibn Gabirol, Judah Halevi, and Moses Ibn Ezra. The historical, social, and religious conditions of Jewish life in Muslim and Christian Spain as reflected in their poetry.

210. MODERN HEBREW POETRY. 3 HOURS. May be repeated for a total of 6 hours of credit. The poetry of Bialik, Tchernichovsky, Shneur, Steinberg, Alterman, and Shlonsky. Readings and comparative analysis of their poetics.

211. THE HEBREW ESSAY. 3 HOURS. Major trends in Jewish, religious, and national thought in modern times.

212. THE WORKS OF AGNON. 3 HOURS. The biographical background and the style and narrative art of S.Y. Agnon; his outlook on the basis of Jewish problems of modern life in the Diaspora and in Israel.

213. FORERUNNERS OF ISRAELI PROSE. 3 HOURS. Readings from Shofman, Smilansky, Agnon, and Berkovitz. Life in the early decades of the twentieth

century in Eretz Israel reflecting the cultural life and problems of a pioneer society.

214. THE LITERATURE OF THE HASKALAH MOVEMENT. 3 HOURS. Survey of the Enlightenment literature; emphasis on the works of Michal, Mapu, and Y.L. Gordon.

215. CONTEMPORARY LITERATURE OF ISRAEL. 3 HOURS. Major literary and thematic trends in the poetry and prose of young Israeli writers. Poets: Alterman, Ratosh, Amichay, Gilboa, and Ravikovitz. Authors: Yizhar, Shamir, Yehoshua and Apelfeld, and Shachar.

216. THE DRAMA IN MODERN HEBREW LITERATURE. 3 HOURS. A survey.

Judaic Studies (Jud)

101. ELEMENTARY YIDDISH I. 4 HOURS. Same as Yiddish 101. For students who have not studied Yiddish. Basic language skills: comprehension, reading, writing, and speaking.

102. ELEMENTARY YIDDISH II. 4 HOURS. Same as Yiddish 102. Basic language skills: comprehension, reading, writing, and speaking. Prerequisite: Jud 101.

103. ELEMENTARY YIDDISH III. 4 HOURS. Same as Yiddish 103. Basic language skills: comprehension, reading, writing, and speaking. Prerequisite: Jud 102.

104. INTERMEDIATE YIDDISH I. 4 HOURS. Same as Yiddish 104. Reading modern Yiddish authors and the Yiddish press. Syntax and composition; conversational practice. Prerequisite: Jud 103.

105. INTERMEDIATE YIDDISH II. 4 HOURS. Same as Yiddish 105. Reading modern Yiddish authors and the Yiddish press. Syntax and composition; conversational practice. Prerequisite: Jud 104.

106. INTERMEDIATE YIDDISH III. 4 HOURS. Same as Yiddish 106. Reading modern Yiddish authors, prose, poetry, and the Yiddish press. Syntax and composition; conversational practice. Prerequisite: Jud 105.

218. SONG OF SONGS. 3 HOURS. Romantic love in the Bible; the background of the Song of Songs and the history of its literal and allegorical interpretations in ancient and modern times.

219. PENTATEUCH, PROPHETS AND WRITINGS: A SURVEY. 3 HOURS. Biblical narrative: its development and its place through the ages in *midrashic*, allegorical, and historical interpretation; biblical law in *midrash halachah* and modern scholarship.

220. WORLD OF THE BIBLE. 3 HOURS. A survey course on the Bible as a whole within the setting of the ancient Near East. Historical and critical introductions.

221. THE DEVELOPMENT OF THE BIBLICAL TEXT. 3 HOURS. The various approaches: traditional rabbinic views, the documentary theory, form criticism, and the evidence of the Qumran texts.

222. THE BIBLE: VERSIONS AND TRANSLATIONS. 3 HOURS. From the earliest versions, Samaritan and Greek, to the most recent translations.

223. ANCIENT ISRAEL: LITERARY SOURCES. 3 HOURS. A comprehensive study of the social, cultural, and religious history of ancient Israel using the biblical text and literary sources of the ancient Near East.

224. ANCIENT ISRAEL: ARCHEOLOGICAL SOURCES. 3 HOURS. Discoveries in Palestine and other Near Eastern lands; their use in the study of ancient Israel.

227. INTRODUCTION TO THE PROPHETIC WRITINGS. 3 HOURS. May be repeated for a total of 15 hours of credit. Selections from the books of Isaiah, Jeremiah, Ezekiel, Haggai, Zechariah, and Malachi with classical and modern commentaries.

228. WISDOM LITERATURE OF THE BIBLE. 3 HOURS. Nature and content of biblical wisdom as distinguished from the prophetic and legal writings of the Bible; the Wisdom Literature within the setting of the ancient Near East.

229. APOCRYPHA. 3 HOURS. Introduction to the Apocrypha. Leading non-canonical books—poetic, prophetic, and narrative.

230. THE BOOK OF GENESIS IN THE CONTEXT OF THE ANCIENT NEAR EAST. 3 HOURS. The book of Genesis in the context of its contemporary Near Eastern literature.

231. PSALMS. 3 HOURS. Hebrew and ancient Near Eastern hymnody; comparison and contrast.

232. THE BOOK OF JOB. 3 HOURS. Job in the light of Talmudic, classical, and modern interpretations. Limitations of human knowledge and ability.

233. QUMRANICA. 3 HOURS. Introduction. The Dead Sea Scrolls: problems of identification, interpretation, and relationship with other known traditions, communities, and literature.

234. EZRA, NEHEMIAH, AND ESTHER. 3 HOURS. Historical and literary background of the period. Selections from classical and modern commentaries.

235. ECCLESIASTES. 3 HOURS. Introduction. Selections from classical and modern commentaries.

236. PROVERBS. 3 HOURS. Introduction. Selections from classical and modern commentaries.

237. LEGAL TEXTS. 3 HOURS. The laws of the Pentateuch in the light of ancient Near Eastern legal literature.

238. LEVITICUS AND DEUTERONOMY. 3 HOURS. Introduction to biblical ethics; the priestly and Deuteronomic codes.

240. MISHNAH: INTRODUCTION. 3 HOURS. Selected texts from the tractates of *Seder Mo'ed*.

241. MISHNAH: TEXTS. 3 HOURS. Selected texts from the tractates of *Seder Nashim*.

242. BABYLONIAN TALMUD: INTRODUCTION. BERAKOTH. 3 HOURS. Halachic and aggadic texts.

243. MIDRASH. 3 HOURS. May be repeated for a total of 6 hours of credit. Introduction to the halachic and aggadic Midrashim. Readings from the *Mechilta* and the *Midrash Rabbah*.

244. TALMUD: LEGAL DOCUMENTS. 3 HOURS. Documents dealing with personal life and business activities in Talmudic literature.

245. BABYLONIAN TALMUD: TEXTS. 3 HOURS. May be repeated for a total of 21 hours of credit. Introduction to various Sedarim and tractates. Halachic and aggadic texts of various tractates with the commentaries of Rashi and Tosafot.

246. THE TALMUDIM: A SURVEY. 3 HOURS. Similarities and differences between the Babylonian and Palestinian Talmud.

247. TALMUD AND CONTEMPORARY SOCIETY. 3 HOURS. May be repeated for a maximum of 9 hours of credit. Legal, ethical, and social issues.

248. ETHICAL TEXTS OF THE TALMUD. 3 HOURS. Selected ethical works in the "minor Tractates" of the Talmud, including *The Fathers According to Rabbi Nathan*, the Tractates Kallah (Bride), and *Derek Erez* (Etiquette).

249. CODES OF MAIMONIDES AND KARO. 3 HOURS. May be repeated for a total of 6 hours of credit. Introduction; selected texts from the *Mishneh Torah* and the *Shulhan Aruk*.

250. EVOLUTION OF JEWISH LAW SINCE THE TALMUD. 3 HOURS. Introduction to responsa literature from ancient, medieval, and modern times. The Tosafists and Codifiers.

251. LITURGY OF THE JEWISH PEOPLE. 3 HOURS. Conceptual analysis of ancient, medieval, and modern forms of Jewish public and private prayer.

252. BASIC IDEAS OF THE JEWISH PEOPLE. 3 HOURS. Classical Jewish view of Jewish existence: covenant, God, man, history. The problem of ethics.

253. BASIC PRACTICES OF THE JEWISH PEOPLE. 3 HOURS. The devotional life of the Jewish people: ritual observances, the home, the synagogue, the holidays, life cycle rites.

254. BASIC INSTITUTIONS AND MOVEMENTS OF THE JEWISH PEOPLE. 3 HOURS. Contemporary ideological movements: orthodox, reform, conservative, and reconstructionist Judaism. Problems of the family. Modern Zionism. Contemporary problems of American Jewry.

260. NEAR EASTERN ERA IN THE HISTORY OF THE JEWISH PEOPLE. 3 HOURS. The rise and development of the Jewish people. Their religious, social, and political institutions. The history of the Oriental Diaspora to the end of the Gaonate and Exilarchate.

261. EARLY HISTORY OF THE JEWISH PEOPLE. 3 HOURS. Hebrew origins, sojourn in Egypt, the Exodus, conquest of Canaan, the period of the judges and the early kings.

262. THE JEWISH PEOPLE FROM THE DEATH OF SOLOMON TO THE HASMONEAN REVOLUTION. 3 HOURS. The Divided Kingdom, the Prophets, the downfall of Israel and Judah, Babylonian captivity, restoration, the Samaritans, Hellenistic rule and Hasmonean revolution, the Mediterranean Diaspora.

263. THE JEWISH PEOPLE FROM THE HASMONEAN KINGDOM TO THE END OF THE TALMUDIC PERIOD. 3 HOURS. The Hasmonean Kingdom, Herod, Roman rule, the downfall of Judea, the Patriarchate, Bar Kokeba, Babylonian Jewry, Mishnah and Talmud.

264. THE HISTORY OF THE SECOND COMMONWEALTH. 3 HOURS. From the return to Zion to the fall of Jerusalem in AD 70.

265. EARLY CHRISTIANITY IN ITS JEWISH ENVIRONMENT. 3 HOURS. May be repeated for a total of 9 hours of credit. Early Jewish and Christian literary sources: comparison and analysis.

266. HISTORY OF THE JEWS IN PRE-CRUSADE EUROPE. 3 HOURS. The Jews in Muslim Spain; Franco-German Jewry; Jewish learning in Western Europe; the Jews in Italy and Byzantium.

267. HISTORY OF THE JEWS IN ARAB AND OTHER MUSLIM COUNTRIES. 3 HOURS. The political, social, communal, economic, religious, and cultural life of the Jews in the Muslim countries from the emergence of Islam to the present.

268. THE WESTERN ERA IN THE HISTORY OF THE JEWISH PEOPLE. 3 HOURS. The rise and development of the Western Diaspora to the establishment of the state of Israel.

269. NEAR EASTERN JEWRY FROM 500 TO 1300. 3 HOURS. Babylonian Jewry: communal organization, social, economic, and cultural history. The Jews in the Muslim empire. The Jews in the Holy Land and in Egypt.

270. DECLINE OF MEDIEVAL WESTERN JEWRY AND THE EMERGENCE OF EAST EUROPEAN JEWRY. 3 HOURS. The Crusades. The decline of Spanish Jewry. The expulsion of the Jews from England, France, and Spain. The expansion of Ashkenazic Jewry and the emergence of East European Jewry.

271. HISTORY OF THE JEWS IN RUSSIA. 3 HOURS. The political, social, communal, economic, religious, and cultural life of the Jews in Russia from antiquity to the present.

272. THE JEWISH PEOPLE IN THE SEVENTEENTH AND EIGHTEENTH CENTURIES. 3 HOURS. The reemergence of Jewish settlements in Holland and England. The emergence of the Jewish community in America. The great Messianic movements. The emergence of Hasidism. The religious struggles of the seventeenth century. The Cossack riots in the Ukraine.

273. ENLIGHTENMENT AND WESTERN JEWRY'S STRUGGLE FOR EMANCIPATION. 3 HOURS. The Haskalah movement. The French Revolution and emancipation. Religious reform.

274. THE JEWISH PEOPLE IN THE NINETEENTH AND TWENTIETH CENTURIES. 3 HOURS. Modern anti-Semitism. The Jews in Eastern Europe and the great migratory movements. American Jewry. Zionism. World War I. The Holocaust. The emergence of the state of Israel.

275. HISTORY OF ZIONISM. 3 HOURS. The Zionist movement: origins and development. Creation of the state of Israel.

276. JEWISH CULTURE AND RELIGIOUS HISTORY IN THE OLD AND NEW WORLDS. 3 HOURS. May be repeated for a total of 9 hours of credit. Same as Religious Studies 276. Origin, evolution, and growth of the religious align-

ments in Judaism; the medieval Jewish community; the ghetto; the Enlightenment; emancipation and its aftermath.

277. AMERICAN JEWISH COMMUNITY. 3 HOURS. Early origins. Religious, educational, and social institutions. Structure and organization.

278. ANTI-SEMITISM. 3 HOURS. Religious origins. The rise of anti-Semitism in Europe. Racial theories. The Dreyfus affair. Protocols of the Elders of Zion. Judeophobia in America.

279. THE HOLOCAUST. 3 HOURS. May be repeated for up to 9 hours of credit. European Jewry between the two World Wars. Events leading to the destruction of major European Jewish centers.

280. THE STATE OF ISRAEL. 3 HOURS. Historical background. Development of the state of Israel in its political, social, demographic, and cultural settings.

281. THE HISTORY AND DEVELOPMENT OF JEWISH ART. 3 HOURS. Development of Jewish art forms from the biblical period to the present.

282. JEWISH SECTS AND SECTARIANISM. 3 HOURS. Same as Religious Studies 226. The sociopolitical factors and their impact on the Jewish religion during the Second Commonwealth; the Samaritans; ethnic origin, history, and literature; the military colony at Elephantine; the Pharisees, Sadducees, Essenes, Zealots, Apocalyptists, and Qumranites, their political and religious views; Judaism and early Christianity.

283. THE THOUGHT OF ABRAHAM J. HESCHEL. 3 HOURS. The philosophical and theological bases of Heschel's writings on social issues, including medical ethics, aging, education, and interfaith relations; his views on Judaism, religion, philosophical anthropology, and rabbinic thought.

284. THE CONCEPT OF THE MESSIAH. 3 HOURS. The history and development of Jewish messianism.

285. THE CLASSICAL PERIOD OF JEWISH PHILOSOPHY. 3 HOURS. The roots of Jewish philosophical speculation in premedieval times.

286. MEDIEVAL JEWISH PHILOSOPHY. 3 HOURS. Personalities and sources of medieval Jewish philosophy.

287. MODERN JEWISH PHILOSOPHY. 3 HOURS. Traditional issues and their expression in modern Jewish philosophy.

288. MAIMONIDEAN STUDIES. 3 HOURS. May be repeated for a total of 9 hours of credit. Textual analysis of and a comparative approach to selected Maimonidean texts.

289. PHILOSOPHICAL TEXTS. 3 HOURS. May be repeated for up to 9 hours of credit. Textual analysis and comparative approaches to the classics of Jewish medieval philosophy.

290. ETHICAL TEXTS. 3 HOURS. May be repeated for up to 9 hours of credit. Textual analysis and comparative themes in the classics of Jewish pietica.

291. INTRODUCTION TO JEWISH THEOLOGY. 3 HOURS. May be repeated for up to 9 hours of credit. Judaism as a covenant religion. Revelation: static or continuous. The nature of prophecy, law and love, the oral and the written law, exegesis as theology, the Torah as God's blueprint, divine and human elements in Scripture. Justifications for religious observance.

292. INTRODUCTION TO JEWISH MYSTICISM. 3 HOURS. May be repeated for up to 9 hours of credit. The inception and development of early Jewish mysticism; the place of the mystical tradition in the history of Jewish thought and practice; unique qualities of Jewish mysticism; inducement and descriptions of the mystical experience; systems of theosophical speculation. Schools within Hasidic thought; mystical trends in modern philosophical, scientific, literary, political, and theological literature.

293. HOLOCAUST LITERATURE. 3 HOURS. May be repeated for up to 9 hours of credit. A cross-disciplinary study of issues raised by the European Holocaust (1939 to 1945).

294. BIBLICAL THEOLOGY. 3 HOURS. The development of central theological problems in biblical thought. The Bible as the root of postbiblical theology.

295. RABBINIC THEOLOGY. 3 HOURS. Examination of central theological issues in rabbinic thought utilizing a variety of contemporary approaches.

296. CONTEMPORARY JEWISH THOUGHT. 3 HOURS. Problems, trends, and developments.

297. INTRODUCTION TO JEWISH ETHICS. 3 HOURS. Same as Religious Studies 297. Relations among individuals; such issues as I and Thou, apathy and empathy, choosing a sex ethic.

298. MARTIN BUBER: HIS LIFE AND WORKS. 3 HOURS. A descriptive and critical analysis of the philosophy of Martin Buber. Stress on Judaism in his work.

299. INDEPENDENT STUDY. 3 TO 6 HOURS. May be repeated for credit. Individual study under faculty direction. Prerequisite: Approval of the department.

350. BIBLICAL EXEGESIS. 4 HOURS. Analysis of the methods, terminology, and basic assumptions of Bible exegetes from earliest times to the present. Selected Bible texts with commentaries of Rashi, Rashbam, Radak, and other traditional and modern commentators. Prerequisites: Junior standing, 15 hours of Judaic studies, and Heb 106 or the equivalent.

353. TRENDS IN MODERN JEWISH THOUGHT. 4 HOURS. Analysis and critique of a variety of modern philosophies of Judaism and their relationship to parallel contemporary trends in western philosophy. Prerequisites: Junior standing and 15 hours of Judaic studies at the 200 level.

355. CONTEMPORARY HEBREW DRAMA. 4 HOURS. Analysis of the works of selected contemporary dramatists; their styles and milieus: Aloni, Shamir, Goldberg, Berkovitch, Kishon, Mosenson, Bar-Yosef. Prerequisites: Junior standing, 15 hours of Judaic studies at the 200 level, and Heb 106 or the equivalent.

370. JEWISH EDUCATION IN THE UNITED STATES: HISTORY AND ISSUES. 4 HOURS. A research-oriented course tracing significant developments in American Jewish schools: organization, philosophy, goals, content, and methods of instruction. Analysis of current issues in Jewish education. Prerequisites: Senior standing, 30 hours of Judaic studies at the 200 level, and Heb 106 or the equivalent.

373. AMERICAN JEWRY: BELIEFS, PRACTICES, AND INSTITUTIONS. 4 HOURS. Origins of contemporary secular and religious ideologies. American Jewish institutions: family, social, philanthropic, educational; protective organizations and fraternal orders. Socioeconomic status of American Jewry; cultural life and the creative arts. The new ethnicism. Prerequisites: Junior standing and 15 hours of Judaic studies at the 200 level.

376. TOPICS IN JEWISH LAW AND LORE: SHULHAN ARUK. 4 HOURS. The laws and customs relating to Hanukkah, Purim, and Passover as they have evolved up to modern times through study and analysis of sources in Hebrew literature. Prerequisites: Junior standing, 15 hours of Judaic studies, and Heb 106 or the equivalent.

Language Laboratory. See Additional Courses.

Latin. See Classics.

Latin American Studies

Associate Professors: Otto Pikaza, PhD, Director of the Program.

Assistant Professors: Mary Kay Vaughan, PhD.

Instructors: Arthur Vazquez, BA.

Lecturers: Renato Barahona, MA.

Major—for the Bachelor of Arts, 52 hours, distributed as follows:
Latin American Studies 233, 234, 235, 261, 262, 263
8 hours from among the following humanities courses: Latin American Studies 161, 170, 171, 223, 224, 232, 242, 243, 244, 248, 249, 264, 265, 266, 267, 268, 269, 308, 309, 310, 311, 315, 323, 324, 361, 390
8 hours from among the following social sciences courses: Latin American Studies 140, 165, 215, 216, 252, 253, 254, 255, 260, 280, 282, 354, 361, 381
12 additional hours of approved courses in Latin American studies

Prerequisite for enrollment in the major: Spanish 101-106 or Spanish 100, 110, 120 or equivalent.

Latin American Studies 299 may be used to fulfill either the social sciences or the humanities requirements according to the content of the course.

(Majors should remember that an additional four hours each in humanities and in social sciences are necessary to fulfill the LAS course distribution requirements.)

Minor—24 hours, as follows:
Latin American Studies 233, 234, 235
Latin American Studies 261, 262, 263

Courses (LASt)

103. INTRODUCTION TO THE BARRIO. 4 HOURS. The historical development of Latin American communities in the United States in general and Chicago in particular. Introduction to concepts necessary for analysis of community development and problems within the overall society.

140. POLITICS OF THE THIRD WORLD. 4 HOURS. Same as Political Science 140. Major political processes and problems, such as colonialism and neo-colonialism, national liberation, problems of national identity and integration, socioeconomic development, violence and revolution.

161. INTRODUCTION TO LATIN AMERICAN HISTORY. 4 HOURS. May not be repeated for credit. Same as History 161. Survey of certain aspects of Latin American civilization in their historical setting.

165. AFRO AND LATIN AMERICAN CULTURES OF NORTH AMERICA. 4 HOURS. Same as Anthropology 165 and Black Studies 165. A synchronic and diachronic survey of the subcultures of minority populations in North America; emphasis on Black and Latin American groups that have emerged in urban areas.

170. MASTERPIECES OF LUSO-BRAZILIAN LITERATURE IN ENGLISH TRANSLATION. 4 HOURS. May be repeated for credit each term topics change. Same as Humanities 170 and Portuguese 170. Representative works with background material.

171. READINGS IN LUSO-BRAZILIAN CULTURE IN ENGLISH TRANSLATION. 4 HOURS. Same as Humanities 171 and Portuguese 171. Selected topics. May be repeated for credit each term topics change.

201. RAPID PORTUGUESE FOR SPEAKERS OF SPANISH. 4 HOURS. Same as Portuguese 201. For students with a fluent knowledge of Spanish. Concentration on the comparative linguistic differences between Spanish and Portuguese and practice in speaking, reading, and writing. Prerequisites: Native Spanish and two 200-level Spanish courses or consent of the instructor.

202. PORTUGUESE COMPOSITION AND CONVERSATION. 4 HOURS. May be repeated for a maximum of 12 hours of credit. Same as Portuguese 202. Practice in writing and speaking. Prerequisite: Port 106 or 120 or LASt 201 or consent of the instructor.

203. INDIAN ARTS OF THE AMERICAS. 4 HOURS. Same as History of Architecture and Art 203. Survey of the arts of the major pre-Columbian cultures of Mesoamerica, South America, and the North American Indians.

215. TOPICS IN THE GEOGRAPHY OF THE CARIBBEAN AREA AND MEXICO. 4 HOURS. Same as Geography 262. Discussions of selected geographic aspects of physical landscapes and the human cultural, economic, and political responses to them in Mexico, Central America, and the West Indies.

216. TOPICS IN THE GEOGRAPHY OF LATIN AMERICA. 4 HOURS. Same as Geography 263. Discussions of selected geographic aspects of regional geography, physical regions, people, economic resources, and political alignments.

218. PRINCIPLES OF ECONOMIC DEVELOPMENT IN APPLICATION. 4 HOURS. Same as Economics 234. Does not count toward the major in economics. Does not count for credit in Latin American studies unless the selected geographical area is Latin America. Analysis of the conditions required for the economic development of various selected geographical areas, such as Latin America, Asia, Africa. Prerequisite: Econ 121 or consent of the instructor.

223. SPANISH-AMERICAN FICTION OF THE TWENTIETH CENTURY I. 4 HOURS. Same as Spanish 223. Readings in contemporary Spanish-American novelists and short story writers. Prerequisite: Span 106 or 120 or four years of high school Spanish or the equivalent.

224. SPANISH-AMERICAN FICTION OF THE TWENTIETH CENTURY II. 4 HOURS. Same as Spanish 224. Continues Latin American Studies 223.

227. HISTORY OF SPAIN FROM 1500 TO 1715. 4 HOURS. Same as History 227. The political, socioeconomic, and cultural development of Imperial Spain from Ferdinand to the War of the Spanish Succession. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

228. HISTORY OF SPAIN FROM 1715 TO 1939. 4 HOURS. Same as History 228. The Enlightenment; Spanish national integration and sociopolitical polarization; the Civil War. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

232. HISPANIC-AMERICAN CULTURE. 4 HOURS. Same as Spanish 232. Required for teacher education majors in Spanish. The cultural aspects of Spanish-American civilization. Prerequisite: Any 200-level literature course or consent of the instructor.

233. LATIN AMERICANS IN CHICAGO I. 4 HOURS. History and problems of the Latin American community in Chicago.

234. LATIN AMERICANS IN CHICAGO II. 4 HOURS. History and problems of the Latin American community in Chicago. Prerequisite: LASt 233 or consent of the instructor.

235. LATIN AMERICANS IN CHICAGO III. 4 HOURS. Organizations and major activities of the predominant Latino groups in Chicago: Mexicans, Puerto Ricans, and Cubans. Prerequisite: LASt 234.

241. BICULTURAL EDUCATION: SPANISH-SPEAKING. 4 HOURS. Same as Education 241. Sociology of how people who have experienced discrimination learn; psychology and sociology of racial prejudice; the industrial city and minority groups; subculture and contraculture and their relationship to the educative process.

242. BICULTURAL EDUCATION: COMPARATIVE STUDY. 4 HOURS. Same as Education 242. Cultural matrix of the bilingual child. Comparative study of Mexican-American, Puerto Rican, and United States cultural patterns of family, stratum and status, role of the teacher, and verbal and nonverbal communication.

243. CULTURAL MATRIXES OF THE SPANISH-SPEAKING CHILD. 4 HOURS. Same as Education 243. A one-term survey of Puerto Rican cultural patterns; special attention to the formation of Puerto Rican culture. The colonial heritage of Spanish and indigenous societies in the formation of modern Puerto Rico. Special attention to Puerto Rican institutional development in its relationship to the forces that determine a national character throughout the Hispanic colonial world; the relevance of the resulting institution is stressed. Prerequisite: Proficiency in Spanish.

244. PUERTO RICO: SOCIAL CHARACTER AND SOCIAL STRUCTURE FOR EDUCATORS. 8 HOURS. Same as Education 244. Intensive study of the cultural vectors determining the character and the history of the Puerto Rican people; emphasis on the interrelationship between culture and education. Prerequisite: Proficiency in Spanish.

248. HISTORY OF SPANISH-SPEAKING MINORITY GROUPS FOR URBAN EDUCATORS. 4 HOURS. Same as Education 248. A one-term survey of the historical roots of the educational experiences and attitudes of Spanish-speaking minority groups. Prerequisite: Junior standing.

249. GEOGRAPHICAL ORIGINS OF SPANISH-SPEAKING MINORITY GROUPS IN URBAN EDUCATION. 4 HOURS. Same as Education 249. A one-term survey of Latin American educational patterns as they affect the urban school experiences of Spanish-speaking minority groups. A comparison of the American Indian and the Mediterranean attitudes toward school participation, especially in urban schools of the United States. Prerequisite: Junior standing.

252. NEW WORLD ARCHEOLOGY I. 4 HOURS. Same as Anthropology 252 and Native American Studies 252. Introduction to the prehistoric cultures of the New World from the populating of the Americas to the beginning of the formative cultural period in the Americas. Prerequisite: Anth 150.

253. NEW WORLD ARCHEOLOGY II. 4 HOURS. Same as Anthropology 253 and Native American Studies 253. Introduction to the prehistoric cultures of the New World from the formative cultural period to the high civilizations of Mesoamerica and South America. Prerequisite: Anth 150.

254. ETHNOGRAPHY OF MESOAMERICA. 4 HOURS. Same as Anthropology 261 and Native American Studies 261. Preconquest civilization of Mesoamerica, the interaction of Spanish and indigenous cultures, and the present Indian cultures of this area. Prerequisite: Anth 160 or consent of the instructor.

255. INDIGENOUS PEOPLES OF SOUTH AMERICA. 4 HOURS. Same as Anthropology 265 and Native American Studies 265. Survey of the indigenous cultures in South America in the ethnographic present. Prerequisite: Anth 160 or consent of the instructor.

260. ETHNOGRAPHY OF URBAN MINORITIES. 4 HOURS. Same as Anthropology 260. Survey of contemporary Black and Spanish-speaking populations in urban North America; emphasis on ecological adaptations and basic principles and ideas of social anthropology. Prerequisite: Anth 160 or LASt 165 or consent of the instructor.

261. COLONIAL LATIN AMERICA. 4 HOURS. Same as History 261. Iberian discovery, conquest, and settlement of America; the establishment of Spanish and Portuguese institutions; social, economic, political, and cultural development in colonial societies from conquest to independence. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

262. LATIN AMERICA IN THE NINETEENTH CENTURY. 4 HOURS. Same as History 262. The independence of Latin America and the establishment of the new nations. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

263. MODERN LATIN AMERICA. 4 HOURS. Same as History 263. The Latin American nations in the twentieth century; their social, economic, political, and cultural development and their struggle for modernization. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

264. COLONIAL MEXICO. 4 HOURS. Same as History 264. The Indian background of Mexico, the Spanish conquest, the amalgamation of Spanish and indigenous cultures, and the evolution of Mexican economic, religious, social, and political institutions under Spanish domination until 1821. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

265. THE MEXICAN NATION FROM 1821 TO 1910. 4 HOURS. Same as History 265. Social, economic, political, and cultural development from independence to the fall of Porfirio Diaz. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

266. MEXICO SINCE 1910. 4 HOURS. Same as History 266. The Mexican Revolution and the development of the modern nation. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

267. THE ESTABLISHMENT OF THE BRAZILIAN NATION: 1500 to 1850. 4 HOURS. Same as History 267. Portuguese discovery, settlement, and exploitation of Brazil during three centuries; creation of the Brazilian nation through an amalgamation of races and cultures in a plantation and mining economy; the establishment and consolidation of independence. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

268. MODERN BRAZIL FROM 1850 TO THE PRESENT. 4 HOURS. Same as History 268. The empire of Pedro II, the antislavery struggle, the Conservative republic, the Vargas era, social and cultural development, and the struggle for democracy and modernization. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

269. TOPICS IN LUSO-BRAZILIAN STUDIES. 4 HOURS. May be repeated for credit. Same as Portuguese 269. Literature, linguistics, and culture. Prerequisite: Consent of the instructor.

275. LATIN AMERICAN WOMEN. 4 HOURS. Same as Women's Studies 275. Latin American women in historical perspective beginning with the general role of women in Western history. Historical analysis of the role of women in different pre-Columbian societies and Mediterranean cultures; the amalgamation of both cultures in colonial Latin America. The changing role of women in nineteenth- and twentieth-century Latin America. Latin American women in the United States.

281. HISTORY OF ARGENTINA. 4 HOURS. Same as History 281. The position of Argentina in the Spanish empire; analysis of independence movenemts; consolidation of export-oriented economy and elites; growth of middle sectors and labor movements; the Peron era; socio-political conflict and economic stagnation from 1955 to the present. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

282. GOVERNMENT AND POLITICS OF LATIN AMERICA. 4 HOURS. Same as Political Science 242. Comparative examination of the governments and politics of selected countries. Patterns of political leadership and followership, governmental processes, problems of development, and foreign political influence. Prerequisite: 4 hours of political science, history, or sociology.

283. HISTORY OF CHILE. 4 HOURS. Same as History 283. Spanish conquest and Indian resistance, the role of Chile in the Spanish empire, the nature of independence movements, consolidation of landed oligarchy, and formation of export economy. Emergence of the middle sectors and labor movement in the twentieth century within the context of underdevelopment. Popular Unity government and military coup. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

285. LATINO SOCIAL MOVEMENTS IN THE UNITED STATES. 4 HOURS. Introduction to the various apsects of the Latino movement; analysis of Latino organizations in the United States in general and in Chicago in particular. Prerequisite: Any one of LASt 269, 271, Hist 260, 269, PolS 100, 120, 130, Soc 100, 110.

287. HISTORY OF PUERTO RICO I. 4 HOURS. Same as History 287. Survey of the socioeconomic, political, racial, and cultural history of Puerto Rico from the Indian period to the *Grito de Lares* (1868). Prerequisite: 4 hours of history at the 100 level or consent of the instructor.

288. HISTORY OF PUERTO RICO II. 4 HOURS. Same as History 288. Survey of the socioeconomic, politcal, racial, and cultural history of Puerto Rico from the *Grito de Lares* (1868) to the present. Prerequisite: LASt 287 or consent of the instructor.

289. HISTORY OF THE MEXICAN PEOPLE IN THE UNITED STATES OF AMERICA I. 4 HOURS. Same as History 289. The political, social, economic, and cultural development of the Mexican people from the Mediterranean and Mesoamerican roots to the independence of Texas. Prerequisite: 4 hours of history or junior standing or consent of the instructor.

292. THE PUERTO RICAN EXPERIENCE IN THE UNITED STATES. 4 HOURS. Same as Anthropology 292. Analysis of the personal identity of the Puerto Rican migrant and the wider issues of the nation, national culture, and ethnos within the framework of the structures of North American society. Prerequisite: LASt 288 or Anth 160 or consent of the instructor.

296. HISTORY OF MINORITIES IN THE UNITED STATES: COLONIAL PERIOD THROUGH RECONSTRUCTION. 4 HOURS. Same as Black Studies 296 and History 296. Racial, ethnic, religious, and political minorities in the United States. Prerequisite: 4 hours of history at the 100 level or jnior standing or consent of the instructor.

297. HISTORY OF MINORITIES IN THE UNITED STATES: RECONSTRUCTION TO THE PRESENT. 4 HOURS. Same as Black Studies 297 and History 297. Racial, ethnic, religious, and political minorities in the United States. Prerequisite: 4 hours of history at the 100 level or junior standing or consent of the instructor.

299. INDEPENDENT STUDY. 2 TO 8 HOURS. May be repeated for credit. Selected topics for individual investigation. Prerequisite: Consent of the instructor and the Latin American Studies Program coordinator.

308. SPANISH-AMERICAN LITERATURE TO 1888 I. 4 HOURS. Same as Spanish 308. Development from the sixteenth century through the end of the Romantic period. Prerequisite: LASt 223 or 224 or the equivalent.

309. SPANISH-AMERICAN LITERATURE TO 1888 II. 4 HOURS. Same as Spanish 309. Continues Latin American Studies 308. Prerequisite: LASt 223 or 224.

310. *MODERNISMO* AND CONTEMPORARY SPANISH-AMERICAN POETRY I. 4 HOURS. Same as Spanish 310. Spanish-American poetry from 1888 to the present with some *Modernista* prose. Prerequisite: LASt 223 or 224.

311. *MODERNISMO* AND CONTEMPORARY SPANISH-AMERICAN POETRY II. 4 HOURS. Same as Spanish 311. Continues Latin American Studies 310. Prerequisite: LASt 223 or 224.

315. ADVANCED TOPICS IN BRAZILIAN LITERATURE. 4 HOURS. May be repeated for credit. Same as Portuguese 315. Topics related to various aspects of Brazilian literary history and Brazilian writers. Topics vary from term to term. Prerequisite: Port 215 or consent of the instructor.

323. THE CONTEMPORARY SPANISH-AMERICAN NOVEL I. 4 HOURS. Same as Spanish 323. From the Romantic period to 1930. Prerequisite: LASt 223 or 224 or the equivalent.

324. THE CONTEMPORARY SPANISH-AMERICAN NOVEL II. 4 HOURS. Same as Spanish 324. Continues Latin American Studies 323. From 1930 to the present. Prerequisite: LASt 223 or 224.

330. SPANISH-AMERICAN THEATER. 4 HOURS. Same as Spanish 330. Historical and critical study of the development of Spanish-American theater from its beginning to the present. Prerequisite: LASt 223 or 224.

333. GAUCHO LITERATURE. 4 HOURS. Same as Spanish 333. Survey of novels, poetry, and short stories relating to the gaucho. Prerequisite: LASt 224.

334. THE NOVEL OF THE MEXICAN REVOLUTION. 4 HOURS. Same as Spanish 334. The major works of Mariano Azuela, Martin Luis Guzman, Jose Ruben Romero, and other writers of fiction. Prerequisite: LASt 224.

335. THE INDIGENIST NOVEL IN LATIN AMERICA. 4 HOURS. Same as Spanish 335. Survey of one of the important developments in the Latin American social novel; emphasis on the novel of the Andean region (Peru, Bolivia, and Ecuador). Prerequisite: LASt 224.

336. EXPERIMENTAL SPANISH-AMERICAN FICTION. 4 HOURS. Same as Spanish 336. Contemporary fiction; emphasis on the latest developments in the novel and short story. Prerequisite: LASt 224.

342. THE ECOLOGY OF COLONIALISM IN THE AMERICAS. 4 HOURS. Same as Anthropology 342. The variables that conditioned different patterns of colonization and factors in the evolution of intercultural relations through the post-Columbian period in the Americas. Prerequisites: Junior standing and anthropology or Latin American studies major, or consent of the instructor.

354. PROBLEMS IN MESOAMERICAN ETHNOLOGY. 4 HOURS. Same as Anthropology 361. Intensive investigation of selected problems from the Mesoamerican area; special emphasis on religion, economics, and social organization. Prerequisite: LASt 254 or consent of the instructor.

361. TOPICS IN LATIN AMERICAN HISTORY. 4 HOURS. May be repeated for credit. Same as History 361. Specific topics are announced each term. Prerequisite: 4 hours of history or consent of the instructor.

367. PROBLEMS IN SOUTH AMERICAN ETHNOLOGY. 4 HOURS. Same as Anthropology 367. Intensive reading and research on theoretical and ethnographic problems in South American Indian social structures and cultures. Special attention to the influence of Levi-Strauss's ideas on the formulation of cultural theory in South America. Prerequisites: Anth 213 and LASt 255 or consent of the instructor.

381. SEMINAR: POLITICAL PROBLEMS OF DEVELOPING SOCIETIES. 4 HOURS. May be repeated to a maximum of 12 hours if the subject matter is different for each registration. Same as Political Science 381. Selected aspects of the politics of the countries of Asia, Africa, and Latin America. Prerequisites: PolS 200 and 232 or consent of the instructor. Additional prerequisites may be stipulated depending on the subject matter of the seminar.

390. TOPICS IN LUSO-BRAZILIAN LITERATURE. 4 HOURS. May be repeated for credit. Same as Portuguese 390. Topics related to various aspects of the Luso-Brazilian language, literature, and culture. Topics vary from term to term. Prerequisite: Consent of the instructor.

391. INTERDISCIPLINARY SEMINAR ON LATIN AMERICAN STUDIES I. 4 HOURS. Specific topics are announced each term. Prerequisite: Latin American studies major or consent of the instructor.

392. INTERDISCIPLINARY SEMINAR ON LATIN AMERICAN STUDIES II. 4 HOURS. Specific topics are announced each term. Prerequisites: Latin American studies major or consent of the instructor and LASt 391.

393. INTERDISCIPLINARY SEMINAR ON LATIN AMERICAN STUDIES III. 4 HOURS. Specific topics are announced each term. Prerequisites: Latin American studies major or consent of the instructor and LASt 392.

Liberal Arts and Sciences. See Additional Courses.

Linguistics

Professors: Andrew Schiller, PhD, Head of the Department; M.A.K. Halliday, PhD; Falk S. Johnson, PhD; Adam Makkai, PhD.

Associate Professors: Valerie Becker Makkai, PhD.

Assistant Professors: Kyoko Inoue, PhD; Janine Reklaitis, PhD; Dale E. Woolley, PhD.

Lecturers: Paul Han, MA; Joseph F.S. Mabwa, BA.

Minor—Students from other disciplines who wish to minor in linguistics must take the following five courses (20 hours): Linguistics 305, 310, 320, 330, and 340.

Courses (Ling)

150. INTRODUCTION TO LANGUAGE STUDY. 4 HOURS. General introduction; topics include meaning, form, and sound in language, how a child learns language, how languages differ, uses and abuses of language, language in its social context, applications of language study.

160. LANGUAGE AND SOCIETY. 4 HOURS. Introduction to the study of language in its social context. Linguistic variation in the community; types of linguistic interaction; how language reflects its social origins.

170. LANGUAGES OF THE WORLD. 4 HOURS. The current classification of the world's 4,000 or 4,500 languages into families with reference to their genetic or typological relationship. The language versus dialect question.

199. FOREIGN LANGUAGE PROFICIENCY. 4 TO 24 HOURS. Special credit for proficiency examinations in certain languages not regularly taught as part of the curriculum of the College of Liberal Arts and Sciences.

250. SURVEY OF THEORIES OF LANGUAGE. 4 HOURS. The contemporary scene of linguistic theory from structuralism, tagmemics, transformational-generative grammar, stratificational-cognitive grammar, systematic and functional grammar, and glossematics to interpretive and generative semantics; references to traditional grammar.

252. INTRODUCTION TO APPLIED LINGUISTICS. 4 HOURS. The cross-connections between linguistic science and other disciplines, such as anthropology, pedagogy, philosophy, psychology, and sociology.

254. LINGUISTICS AND LITERATURE. 4 HOURS. The usefulness of some concepts and techniques of linguistics to the study of literature; practical applications to literary analysis and criticism.

305. INTRODUCTION TO LINGUISTICS. 4 HOURS. Theories and methods of the phonological, morphological, and syntactic analysis of language. Prerequisite: Junior standing.

307. HISTORY OF LINGUISTIC SCIENCE. 4 HOURS. Development of linguistic thought from its historical beginnings to the present. Prerequisite: Ling 305 or junior standing and consent of the instructor.

309. INTRODUCTION TO BIBLIOGRAPHY AND RESEARCH. 4 HOURS. Detailed study of bibliographical tools in the various fields of linguistics. Prerequisite: Junior standing or consent of the instructor.

310. PHONOLOGY. 4 HOURS. Introduction to the theories and methods of phonological analysis. Prerequisite: Ling 305 or junior standing or consent of the instructor.

312. LINGUISTIC PHONETICS. 4 HOURS. Same as Speech and Theater 308. The relationship of articulatory, acoustic, and auditory phonetics to the study of language. Prerequisite: Ling 310, or junior standing and consent of the instructor.

314. EXPERIMENTAL PHONETICS. 4 HOURS. Same as Speech and Theater 309. Contributions of instrumental techniques and experimental design to the study of phonetics. Prerequisite: Ling 310, or junior standing and consent of the instructor.

320. MORPHOLOGY. 4 HOURS. Introduction to the theories and methods of morphological analysis. Prerequisite: Ling 310 or junior standing and consent of the instructor.

330. SYNTAX. 4 HOURS. Introduction to the theories and methods of syntactic analysis. Prerequisite: Ling 320 or junior standing and consent of the instructor.

340. COMPARATIVE AND HISTORICAL LINGUISTICS. 4 HOURS. The comparative and diachronic study of languages. Prerequisite: Ling 310 or junior standing and consent of the instructor.

342. CONTRASTIVE LANGUAGE STUDIES. 4 HOURS. Theory and practice of contrastive descriptions of languages, exemplified by contrastive studies of English with various other languages, especially Spanish. Prerequisite: Ling 305.

352. APPLIED LINGUISTICS. 4 HOURS. May be repeated for a maximum of 12 hours of credit. Study of a selected topic, such as the problems of literary style, rhetoric, metrics, or the construction of pedagogical grammars. Content varies. Prerequisite: Ling 305 or junior standing and consent of the instructor.

353. DIALECTOLOGY. 4 HOURS. Geographical and social variations in languages. Prerequisite: Ling 310 or junior standing and consent of the instructor.

356. FIELD METHODS IN LINGUISTICS. 4 HOURS. The description of a language using data supplied by native speakers. Prerequisite: Ling 310 or junior standing and consent of the instructor.

357. SYSTEMIC AND FUNCTIONAL DESCRIPTION OF MODERN ENGLISH I. 4 HOURS. An introductory scientific description; emphasis on surface structure. Prerequisite: Ling 305.

358. SYSTEMIC AND FUNCTIONAL DESCRIPTION OF MODERN ENGLISH II. 4 HOURS. Advanced scientific description; emphasis on meaning and social codes. Prerequisite: Ling 357.

359. TOPICS IN LINGUISTICS. 4 HOURS. May be repeated for a maximum of 12 hours. Topics vary. Prerequisite: Consent of the instructor.

360. PROSEMINAR ON LINGUISTICS. 4 HOURS. May be repeated for a maximum of 12 hours. Seminar reports and papers on a specific topic of discussion for the term. Topics vary. Prerequisites: 12 hours of linguistics and consent of the instructor.

374. THE PSYCHOLOGY OF LANGUAGE. 4 HOURS. Same as Psychology 354 and Speech and Theater 384. Introductory survey of methods, theory, and research; the history and present status of psychology's interest in language behavior. Prerequisite: Consent of the instructor.

380. PROBLEMS IN LINGUISTIC ANALYSIS. 4 HOURS. Same as Anthropology 380. The methods and techniques used in linguistics, with reference to actual language data; emphasis on anthropological applications. Prerequisite: Anth 280 or Ling 305 or consent of the instructor.

383. TEACHING ENGLISH AS A SECOND LANGUAGE. 4 HOURS. Same as Education 383 and English 383. The methodology of teaching English to residents of the United States who do not speak the language, especially Spanish-Americans. Prerequisite: Engl 300 or 205 or Ling 305.

397. INDEPENDENT STUDY. 1 TO 4 HOURS. May be repeated for a maximum of 8 hours. Students are assigned to this course at the discretion of the department. Independent study in an area of linguistics not normally covered by regular course offerings. Prerequisites: 12 hours of linguistics and approval of the department.

Lithuanian. See Additional Courses.

Mathematics

Professors: Philip Dwinger, PhD, Head of the Department; A.O.L. Atkin, PhD; Norman Blackburn, PhD; Herbert J. Curtis, PhD; Flora Dinkines, PhD; Irwin K. Feinstein, PhD; Paul Fong, PhD; David A. Foulser, PhD; Evelyn Frank, PhD; Henry L. Garabedian, PhD (Emeritus); Victor K.A.M. Gugenheim, PhD; Norman T. Hamilton, PhD; Alice G. Hart, MS; Miles C. Hartley, PhD (Emeritus); Louise Hay, PhD; A. Hedayat, PhD; Noboru Ito, PhD; Shmuel Kantorovitz, PhD; Marvin I. Knopp, PhD; Joseph Landin, PhD (Emeritus); Manuel Lerman, PhD (Visiting); David A. Page, MA; Louis L. Pennisi, PhD; Vera Pless, PhD; Robert I. Soare, PhD; W. Forrest Stinespring, PhD; Victor Twersky, PhD.

Associate Professors: Furio Alberti, PhD; Herbert J. Alexander, PhD; Ruth M. Ballard, PhD (Emeritus); Eugene M. Barston, PhD; Neil E. Berger, PhD; Joel D. Berman, PhD; Aldridge K. Bousfield, PhD; Warren H. Brothers, PhD; Calixto P. Calderon,

PhD; Louis I. Gordon, PhD; Brayton I. Gray, PhD; Floyd B. Hanson, PhD; Melvin L. Heard, PhD; Roger G. Hill, BA; William A. Howard, PhD; Richard G. Larson, PhD; Sim Lasher, PhD; Charles S.C. Lin, PhD; James W. Moeller, PhD; Kenneth H. Murphy, MS; Thomas B. Ondrak, MS; T.E.S. Raghavan, PhD; G.V. Ramanathan, PhD; Neil W. Rickert, PhD; Stanley L. Sclove, PhD; Lawrence R. Sjoblom, BS; Martin C. Tangora, PhD; Philip D. Wagreich, PhD; Avrum I. Weinzweig, PhD; John W. Wood, PhD.

Assistant Professors: John T. Baldwin, PhD; Winifred V. Berglund, MA (Emeritus); R. Terry Czerwinski, PhD; Susan J. Friedlander, PhD; Gerald L. Gordon, PhD; James L. Heitsch, PhD; Steven L. Jordan, PhD; Louis H. Kauffman, PhD; Jeffrey S. Leon, PhD; Jeff E. Lewis, PhD; Julia B. Linn, MS; Jeanette L. Lumley, MA (Emeritus); John M. Masley, PhD; Kenneth W. Newman, PhD; Grace M. Nolan, MS; Richard C. Scalzo, PhD; Helen W. Sears, MA; C. Bennett Setzer, PhD; Fred L. Smith, PhD; Stephen D. Smith, PhD; William Stein, PhD; Rose L. Vedral, MA; Leo F. Ziomek, PhD.

Instructors: Kathleen M. Hotton, MA; Betty J. Kuzmanic, MEd; David Niday, MS (Visiting); Charles E. Olsen, BS (Emeritus); Rose L. Shook, MA (Emeritus).

Lecturers: Lawrence Gearhart, PhD; Anthony Hughes, PhD; Li-Fan Ma, PhD; Faustine Perham, PhD; John Urenko, PhD.

Major—for the Bachelor of Science, 56 hours, including:

Mathematics 130, 131, 132, 133	20 hours
340, 341, 342	9 hours
Three courses from 310, 311, 312, 313, 314, and 315	10 hours

Usually a student takes 310, 311, and 312 or 313, 314, and 315, but other combinations are permissible if a department adviser approves.

The remaining hours are to be chosen from mathematics courses numbered 195 or higher with the exception of 300, 301, 302, and 348. Each mathematics major is assigned a department adviser and the student's choice of courses must be approved by the adviser.

Transfer Students. For graduation, a transfer student must pass at least 18 hours of 300-level mathematics courses taken at Chicago Circle.

Required Prerequisite and Collateral Courses—A student majoring in mathematics who does not have a minor program approved by another department must take a program of collateral courses. This program should demonstrate the study in some depth of a field that is related to or uses mathematics.

Option I: Physics 111, 112, 113, and 114.

Option II: 24 hours of courses chosen from one or two fields: if two are chosen, a minimum of 8 hours must be taken in each field. Normally, at least one of the fields should be chosen from the natural sciences. Other fields may be elected subject to approval by the department adviser.

A student who intends to major in mathematics but lacks the prerequisites to begin with Mathematics 130 may obtain credit for college algebra and trigonometry by taking Mathematics 104 and 105, or 100 and 101 and 105. However, none of these courses may be applied toward the 56 hours of credit required for the degree.

Honors Courses. Honors sections of some courses in mathematics are offered throughout the year. For details see the Timetables. Admission to honors sections is not restricted to mathematics majors, but consent of the department is required.

Departmental Distinction: The student must qualify for College Honors and must have done exceptional work in mathematics, as determined by the department. Generally a 4.50 average in upper-division work is required.

Minor—Students from other departments who wish to minor in mathematics must complete Mathematics 130, 131, 132, 133, and 12 hours of mathematics courses at the 200 or 300 level.

Teacher Education in Mathematics: Requirements for Teaching in Secondary Schools

Major—for the Bachelor of Science, 55-57 hours
Mathematics 130, 131, 132, 133
300, 301, 302, 303, 304
305, 307, 310 or 313, 340, 341
342 or 348
Electives: 5-19 hours

Minor—34-36 hours
Mathematics 130, 131, 132, 133
300, 307
301 and 302 or
340 and 303 or
348 and 303

Students in the Teacher Education in Mathematics curriculum must have a cumulative grade point average in mathematics courses of not less than 3.50 to be recommended for Education 270, student teaching. Students are strongly urged to choose electives from areas of study that support their major programs. The department advisers for this curriculum are available to assist the student in the selection of such courses.

Curriculum in Mathematics and Computer Science

Designed for students who seek careers in systems and/or mathematical programming. Students who successfully complete the program are awarded the degree of Bachelor of Science in Mathematics and Computer Science. Students in this curriculum who plan to continue into graduate studies are urged to include among their elective courses as many 300-level mathematics courses as possible, especially 310, 311, 312, 340, 341, 342. The requirements of the curriculum are:

English Composition 101, 102	8 hours
Credit or exemption in 106 of a language	0-24
Liberal Arts and Sciences area requirements in humanities and social sciences	24
Mathematics 130, 131, 132, 133, 195, 220, 280, 281, 290, and 348[1]	40
Five hours of statistics at the 300 level[2]	5

1. Mathematics 342 with its prerequisites may be taken instead of Mathematics 348.

2. This requirement may be satisfied by the completion of Mathematics 250 prior to September 1974.

Mathematics 307, 310, 313, or 343	3-5
Three courses selected from Mathematics 387 through 397[3]	9
Physics 131, 132, and 7 additional hours of natural sciences; or Physics 111, 112, 113	14
Information Engineering 210,[4] 211	5
Two courses selected from Information Engineering 212 and 311 or 240 and 340 or 212 and 240	8
Electives	38-64

Courses (Math)

100. ALGEBRA I. 5 HOURS. Credit is not given for Mathematics 100 if the student has credit in Mathematics 101, 104, 112, 130, 171, or 172 or the equivalent. No graduation credit for architecture, business administration, or engineering students. Fundamentals of algebra, factoring, fractions, radicals, exponents, functions, graphing, and solution of linear, simultaneous, and quadratic equations. Prerequisites: 1 unit of entrance credit in algebra and 1 unit in plane geometry.

101. ALGEBRA II. 5 HOURS. Credit is not given for Mathematics 101 if the student has credit in Mathematics 104, 112, 130, or 172 or the equivalent. No graduation credit for architecture, business administration, or engineering students. Complex numbers, logarithms, progressions, mathematical induction, binomial theorem, inequalities, theory of equations, determinants. Prerequisite: Math 100.

104. COLLEGE ALGEBRA. 5 HOURS. Credit is not given for Mathematics 104 if the student has credit in Mathematics 100, 101, 112, or 131 or the equivalent. No graduation credit for architecture, business administration, or engineering students. Theory of equations, determinants, complex numbers, permutations and combinations, mathematical induction, binomial theorem, progressions, inequalities, logarithms. Prerequisites: 1½ units of entrance credit in algebra and 1 unit in plane geometry and/or Math 172.

105. TRIGONOMETRY. 3 HOURS. No graduation credit for architecture, business administration, or engineering students. Restricted to students who have not had a formal course in trigonometry. Identities, equations, addition formulas and derived relations, solution of triangles, radian measure, graphs, inverse functions. Prerequisites: 1½ units of entrance credit in algebra and 1 unit in plane geometry and/or Math 101 or 104 or 172.

106. MATHEMATICS FOR ELEMENTARY TEACHERS I. 4 HOURS. Designed to prepare students to teach contemporary mathematics programs in the elementary school. Prerequisite: Enrollment in the College of Education.

107. MATHEMATICS FOR ELEMENTARY TEACHERS II. 4 HOURS. Prerequisite: Math 106.

108. MATHEMATICS FOR ELEMENTARY TEACHERS III. 4 HOURS. Prerequisite: Math 107.

109. FINITE MATHEMATICS FOR BUSINESS. 3 HOURS. Credit is not given for both Mathematics 109 and 110. For students in the College of Business Admin-

3. With the consent of the adviser some of these 9 hours may be taken in Mathematics 398, Special Topics in Mathematics, if the topics are pertinent to computer science.

4. Physics 113 can replace Physics 132 as a prerequisite to Information Engineering 210 for students in the curriculum in mathematics and computer science.

istration; others, by approval of the department. Sets, probability, vectors and matrices. Prerequisite: Math 101 or 104 or the equivalent.

110. FINITE MATHEMATICS. 5 HOURS. Credit is not given for both Mathematics 110 and 109. Logic, sets, probability, vectors and matrices, linear programming. Prerequisite: Math 101 or 104 or the equivalent.

111. INTRODUCTION TO ANALYSIS I. 3 HOURS. Credit is not given for Mathematics 111 if the student has credit in Mathematics 130. For students in the College of Business Administration; others, by approval of the department. Introduction to differential and integral calculus, together with sufficient material from analytic geometry to assiste in the development and application of the calculus. Prerequisite: Math 101 or 104 or the equivalent.

112. INTRODUCTION TO ANALYSIS II. 3 HOURS. Credit is not given for Mathematics 112 if the student has credit in Mathematics 131. For students in the College of Business Administration; others, by approval of the department. Continues Mathematics 111. Prerequisite: Math 111.

115. FUNDAMENTALS OF MATHEMATICS I. 4 HOURS. No graduation credit for architecture, business administration, or engineering students. Survey course: introduction to probability theory; handling and organizing data; making measurements.

116. FUNDAMENTALS OF MATHEMATICS II. 4 HOURS. No graduation credit for architecture, business administration, or engineering students. Survey course: introduction to statistics; pattern recognition; weighing chances; hypothesis testing; applications in biological, physical, and social sciences. Prerequisite: Math 115.

117. FUNDAMENTALS OF MATHEMATICS III. 4 HOURS. No graduation credit for architecture, business administration, or engineering students. Survey course: selected topics, including Pythagorean triples, intuitive notions of topology, and map coloring.

118. FUNDAMENTALS OF MATHEMATICS IV. 4 HOURS. No graduation credit for architecture, business administration, or engineering students. Survey course: introduction to mathematical modeling. Examples of the way in which certain problems in the biological, physical, and social sciences are described mathematically. The role of mathematics in understanding and solving such problems. Prerequisites: 1 unit of entrance credit in algebra and 1 unit in plane geometry.

119. FUNDAMENTALS OF MATHEMATICS V. 4 HOURS. No graduation credit for architecture, business administration, or engineering students. Survey course: introduction to computer science. Nature of computers. Introduction to programming in an easy language. Examples of simulation of a system. Basic concepts of artificial intelligence. Social issues related to data banks and various computer uses. Prerequisites: 1 unit of entrance credit in algebra and 1 unit in plane geometry.

130. CALCULUS AND ANALYTIC GEOMETRY I. 5 HOURS. Credit is not given for Mathematics 130 if the student has credit in Mathematics 112; a student with credit in Mathematics 111 only may take Mathematics 130 for credit. Elementary analytic geometry. Differential calculus and applications. Logarithmic and exponential functions. Prerequisites: Math 101 and 105 or 104 and 105 or the equivalents.

131. CALCULUS AND ANALYTIC GEOMETRY II. 5 HOURS. Differential and integral calculus and applications. Prerequisite: Math 130.

132. CALCULUS AND ANALYTIC GEOMETRY III. 5 HOURS. Infinite series. Vectors and parametric equations. Three-dimensional analytic geometry. Elementary linear algebra. Prerequisite: Math 131.

133. CALCULUS AND ANALYTIC GEOMETRY IV. 5 HOURS. Vector functions. Partial differentiation. Multiple integrals. Prerequisite: Math 132.

170. INTRODUCTION TO COLLEGE MATHEMATICS I. 5 HOURS. Credit is not given for Mathematics 170 if the student has credit in any one of Mathematics 100, 101, 104, 105, 110, 111, 130, 171, or 172 or the equivalent. No graduation credit for architecture, business administration, or engineering students. Rational operations of arithmetic, fundamental operations of algebra, linear equations, and polynomials. Prerequisites: 1 unit of entrance credit in algebra, 1 unit of entrance credit in plane geometry, and approval of the department.

171. INTRODUCTION TO COLLEGE MATHEMATICS II. 5 HOURS. Credit is not given for Mathematics 171 if the student has credit in any one of Mathematics 100, 101, 104, 105, 110, 111, 130, or 172 or the equivalent. No graduation credit for architecture, business administration, or engineering students. Fundamental operations of algebra, linear equations, simultaneous equations, lines, determinants, polynomials, and functions. Prerequisites: Math 170 and approval of the department or 1½ to 2 units of entrance credit in algebra and/or trigonometry, 1 unit of entrance credit in plane geometry, and approval of the department.

172. INTRODUCTION TO COLLEGE MATHEMATICS III. 5 HOURS. Credit is not given for Mathematics 172 if the student has credit in any one of Mathematics 100, 101, 104, 105, 110, 111, or 130 or the equivalent. No graduation credit for architecture, business administration, or engineering students. Fractional expressions and equations, applied problems, exponents, radicals, quadratic functions and equations, exponential and logarithmic functions. Prerequisites: Math 171 and approval of the department.

194. INTRODUCTION TO AUTOMATIC DIGITAL COMPUTING FOR NON-TECHNICAL STUDENTS. 3 HOURS. Credit is not given for both Mathematics 194 and 195; either serves as the prerequisite for more advanced programming courses. Programming a modern digital computer in a user-oriented language. For students in curricula that do not require calculus; assigned problems assume only high school mathematics.

195. INTRODUCTION TO AUTOMATIC DIGITAL COMPUTING. 3 HOURS. Credit is not given for both Mathematics 195 and 194; either serves as the prerequisite for more advanced programming courses. Programming a modern digital computer in a user-oriented language. For students in curricula that require calculus; assigned problems assume familiarity with elementary calculus. Prerequisite: Credit or concurrent registration in Math 132.

198. SPECIAL TOPICS IN MATHEMATICS. 1 TO 4 HOURS. May be repeated for credit. Course content is announced prior to each term in which it is given. Prerequisite: Consent of the instructor.

210. IDEAS IN MATHEMATICS. 4 HOURS. Historical and intellectual aspects of some of the key ideas of pure and applied mathematics; interplay between the development of concepts in pure and applied mathematics. Prerequisites: Superior standing and consent of the instructor.

220. ELEMENTARY DIFFERENTIAL EQUATIONS I. 3 HOURS. Systematic procedures for solving ordinary differential equations; emphasis on initial value problems of second order linear equations. Series solutions near ordinary and singular points. Prerequisite: Math 133.

250. STATISTICS FOR ENGINEERS. 5 HOURS. A first course in the use of statistical methods for interpreting the results of experiments. Probability and distributions, expectation, sampling and testing, estimation problems, chi-square test, *T* and *F* tests, regression and correlation. Prerequisite: Math 133.

280. PROBLEM-ORIENTED LANGUAGES. 3 HOURS. Several problem-oriented machine languages, such as ALGOL, PL/1, SNOBOL. Programming exercises using these languages. Prerequisite: Math 194 or 195.

281. ASSEMBLY LANGUAGE PROGRAMMING. 3 HOURS. The logical organization of modern digital computers. Assembly language programming for such a machine. Prerequisite: Math 194 or 195.

282. CONCEPTUAL FOUNDATIONS OF MODERN COMPUTATION. 3 HOURS. ALGOL as the basis for learning sophisticated concepts of program structure and data management. Syntax, block structure, recursive procedures, list structures, and elementary analysis of algorithms. Prerequisite: Math 194 or 195.

290. INTRODUCTION TO THE THEORY OF DIGITAL MACHINES. 3 HOURS. The general organization of computers, number systems, Boolean algebra, design of combinational circuits, and sequencing of arithmetic operations. Prerequisite: Math 195.

298. SPECIAL TOPICS IN MATHEMATICS. 1 TO 4 HOURS. May be repeated for credit. Course content is announced prior to each term in which it is given. Prerequisite: Consent of the instructor.

300. TEACHERS COURSE I. 3 HOURS. Important concepts and the problems involved in the teaching theory; treatment of numeration systems, set relations, functions, whole numbers, logic, and proof; examination of some of the major new curricula. Prerequisite: Math 133 or consent of the instructor.

301. TEACHERS COURSE II. 3 HOURS. Continues Mathematics 300. Topics, discussed from an advanced viewpoint, include mathematical induction, the completeness axiom, composition of functions, sequences, a vector approach to geometry, axioms of the Hilbert type. Prerequisite: Math 300 or consent of the instructor.

302. TEACHERS COURSE III. 3 HOURS. Continues Mathematics 301. Topics, discussed from an advanced viewpoint, include arithmetic and geometric progressions, continued sums and products, difference sequences, pigeon-hole principle, limits, continuity, exponential functions, logarithmic functions, circular functions, combinations and permutations. Prerequisite: Math 301 or consent of the instructor.

303. ADVANCED EUCLIDEAN GEOMETRY I. 3 HOURS. Geometry from Euclid to the present, equivalents of Euclid's fifth postulate, noneuclidean geometries, finite and projective geometries, invariants of configurations under transformation. Prerequisite: Math 133.

304. ADVANCED EUCLIDEAN GEOMETRY II. 3 HOURS. The parallel postulate, similarity, area, perpendicularity, circles and spheres, constructions with ruler and compass. Prerequisite: Math 303.

305. ADVANCED EUCLIDEAN GEOMETRY III. 3 HOURS. Ruler and compass constructions, proportionality, length and area, solid mensuration, hyperbolic geometry. Prerequisite: Math 304.

307. THEORY OF SETS AND THE REAL NUMBER SYSTEM. 5 HOURS. Elementary set theory and the development of the integers, the rational numbers, and the real numbers. Prerequisite: Math 133.

309. TOPICS IN THE TEACHING OF MATHEMATICS. 3 HOURS. May be repeated for credit. No more than 8 hours may be used toward the Master of Science in the Teaching of Mathematics. Seminars, conferences, or sections on special topics and advanced problems for students majoring in mathematics education and for in-service teachers who wish to study new-curriculum development and special problems in mathematics. Prerequisite: Math 302 or consent of the instructor.

310. ADVANCED CALCULUS I. 4 HOURS. Differential and integral calculus of vector fields, vector functions, partial differentiation, transformations, improper integrals, double and triple integrals, and applications. Prerequisite: Math 133.

311. ADVANCED CALCULUS II. 3 HOURS. Line and surface integrals, Green's theorem, Stokes's theorem, sequences, infinite series, uniform convergence. Prerequisite: Math 310.

312. ADVANCED CALCULUS III. 3 HOURS. A set of advanced topics selected for applications in the physical sciences and engineering. Prerequisite: Math 311.

313. ANALYSIS I. 3 HOURS. The real numbers, countable and uncountable sets, the topology of the reals, compactness, convergent and divergent sequences, Cauchy sequences, infinite series, convergence tests, rearrangements, the topology of n-space, continuous functions and their properties. Prerequisite: Math 133.

314. ANALYSIS II. 3 HOURS. The derivative, mean value theorems, Taylor's theorem with remainder, the Riemann integral, integrability of continuous functions, the fundamental theorem of calculus, convergence of sequences and series of functions, uniform convergence, conditions for piece-wise differentiability and integrability, power series. Prerequisite: Math 313.

315. ANALYSIS III. 4 HOURS. Differentiation in n-space, partial derivatives, the derivative as a linear approximation, inverse and implicit function theorems, integration in Rn, change of variables in integration, differential forms and integration of differential forms, Stokes's theorem. Prerequisite: Math 314.

321. ELEMENTARY DIFFERENTIAL EQUATIONS II. 3 HOURS. Systems of linear first order differential equations. Boundary value problems for second order linear equations, introduction to partial differential equations. Nonlinear problems described by one or two differential equations of first order. Prerequisite: Math 220.

322. ELEMENTARY PARTIAL DIFFERENTIAL EQUATIONS I. 3 HOURS. Second order linear partial differential equations and their initial value and boundary value problems. Separations of variables and Green's formula considerations. Eigenfunction expansions for homogeneous and inhomogeneous heat equation in finite domains. Sturm-Liouville problem. Fourier series. Prerequisites: Math 310 or 313 and Math 321.

323. ELEMENTARY PARTIAL DIFFERENTIAL EQUATIONS II. 3 HOURS. The potential equation and the wave equation in finite domains. Semi-infinite

and infinite domains. Fourier integrals. Cylindrical and spherical harmonics. Fourier-Bessel and Legendre-Bessel expansions. Prerequisite: Math 322.

324. SPECIAL FUNCTIONS IN PURE AND APPLIED MATHEMATICS I. 3 HOURS. Special functions, including gamma, beta, cylinder, hypergeometric, and Bessel functions, as they occur in pure and applied mathematics and engineering. Prerequisite: Credit or registration in Math 321.

325. SPECIAL FUNCTIONS IN PURE AND APPLIED MATHEMATICS II. 3 HOURS. Special functions and polynomials, including orthogonal, Legendre, Hermite, Laguerre, and Jacobi polynomials, as they occur in pure and applied mathematics and engineering. Prerequisite: Math 324.

326. SPECIAL FUNCTIONS IN PURE AND APPLIED MATHEMATICS III. 3 HOURS. Special functions, including hypergeometric and Bessel functions, generating functions, and orthogonal, Legendre, Hermite, Laguerre, and Jacobi polynomials. Prerequisite: Math 325.

330. COMPLEX ANALYSIS FOR APPLICATIONS I. 3 HOURS. Credit is not given for both Mathematics 330 and 332. Complex numbers and their geometrical representation, analytic functions, elementary functions, complex integration, Taylor and Laurent series, the calculus of residues, introduction to conformal mapping. Prerequisite: Math 310 or 313.

331. COMPLEX ANALYSIS FOR APPLICATIONS II. 3 HOURS. Branch-point integration, series and product expansions, complex integral representations of special functions (gamma, hypergeometric, Legendre, Bessel), asymptotic methods, introduction to transforms. Prerequisite: Math 321, 330.

332. COMPLEX VARIABLES I. 3 HOURS. Credit is not given for both Mathematics 332 and 330. Power series in one variable, holomorphic functions, Cauchy's integral theorem. Taylor and Laurent expansions. Prerequisite: Math 312 or 315 or the equivalent.

333. COMPLEX VARIABLES II. 3 HOURS. Analytic functions of several complex variables, harmonic functions, convergence of sequences of holomorphic functions, infinite products, normal families, holomorphic transformations, holomorphic systems of differential equations. Prerequisite: Math 332.

340. MODERN HIGHER ALGEBRA I. 3 HOURS. Sets, groups, rings, fields. Prerequisite: Math 133.

341. MODERN HIGHER ALGEBRA II. 3 HOURS. Euclidean and polynomial rings, vector spaces, linear transformations and matrices. Prerequisite: Math 340.

342. MODERN HIGHER ALGEBRA III. 3 HOURS. Dual spaces, inner products spaces, modules, canonical forms of matrices, quadratic forms. Prerequisite: Math 341.

343. FORMAL LOGIC I. 4 HOURS. Same as Philosophy 343. Propositional logic, logic of quantifiers, and identity and completeness. Prerequisite: Consent of the instructor; none for mathematics majors.

344. FORMAL LOGIC II. 4 HOURS. Same as Philosophy 344. Continues Mathematics 343. Mathematical analysis of decidability and computability. Arithmetization of syntax. Incompleteness and undefinability theorems. Introduction to axiomatic set theory. Prerequisite: Math 343.

348. LINEAR TRANSFORMATIONS AND MATRICES. 5 HOURS. Matrix algebra, determinants, inverse of a matrix, rank and equivalence, linear independence, vector spaces and linear transformations, eigen values and eigen function expansions. Prerequisite: Math 133.

350. INTRODUCTION TO HIGHER GEOMETRY I. 3 HOURS. Projective properties in the euclidean plane, the projective plane, axioms for the projective plane, conics, introduction to coordinates. Prerequisite: Math 342.

351. INTRODUCTION TO HIGHER GEOMETRY II. 3 HOURS. Topics in geometry, projective planes, higher dimensional projective geometries, model as subspaces of a vector space, coordinatization. Prerequisite: Math 350.

353. INTRODUCTION TO DIFFERENTIAL GEOMETRY. 3 HOURS. Curves, surfaces, manifolds imbedded in euclidean space, Riemannian geometry, first and second fundamental forms of imbedded surfaces. Prerequisite: Math 312 or 315.

355. INTRODUCTION TO TOPOLOGY I. 3 HOURS. Topological spaces, continuous functions, homeomorphisms, connectedness, compactness, separation axioms, and other topics. Prerequisite: Math 310 or 313.

356. INTRODUCTION TO TOPOLOGY II. 3 HOURS. Continues Mathematics 355. Locally connected spaces, arcs and arcwise connectivity, Cantor sets, and other topics in general topology. Prerequisites: Math 340, 355.

357. INTRODUCTION TO TOPOLOGY III. 3 HOURS. Continues Mathematics 356. Vector spaces, polytopes, homology theory, Euler-Poincare formula, Brouwer degree and Brouwer fixed-point theorem, and other topics in general topology. Prerequisite: Math 356.

358. STATISTICAL METHODS. 3 HOURS. Statistical concepts, techniques, and methods. Topics include probability theory and models, statistical estimation, confidence limits, and hypothesis testing. Prerequisite: Math 370.

360. ELEMENTARY THEORY OF NUMBERS I. 3 HOURS. The basic concepts: divisibility, prime numbers, congruences, quadratic reciprocity law. Prerequisite: Math 133 or approval of the department.

361. THEORY OF NUMBERS II. 3 HOURS. Functions of number theory, recurrence functions, diophantine equations, quadratic forms, Farey sequences and rational approximations. Prerequisite: Math 360 or consent of the instructor.

362. THEORY OF NUMBERS III. 3 HOURS. Continued fractions, distribution of primes, algebraic numbers, polynomials, partitions, density of sequences of integers. Prerequisite: Math 361 or consent of the instructor.

366. INTRODUCTION TO THE MATHEMATICAL METHODS OF THEORETICAL PHYSICS I. 4 HOURS. Same as Physics 366. The traditional mathematical methods of theoretical physics from an intuitive point of view. Applications to problem-solving in electrostatics and classical and quantum mechanics. Matrices and linear transformations, Fourier analysis, the partial differential equations of physics, and Sturm-Liouville theory. Introduction to special functions frequently encountered in physics. Prerequisites: Math 220, 310.

367. INTRODUCTION TO THE MATHEMATICAL METHODS OF THEORETICAL PHYSICS II. 4 HOURS. Same as Physics 367. The traditional mathematical methods of theoretical physics from an intuitive point of view.

Applications to problem-solving in electrostatics, electrodynamics, and classical and quantum mechanics. The special functions frequently encountered in physics and their use in the solution of boundary value problems, power series solutions, Green's functions, contour integral representations, and additional uses. Prerequisite: Math 366.

370. INTRODUCTION TO PROBABILITY. 3 HOURS. Probability models, univariate and multivariate distributions, random variables. Prerequisite: Math 133.

371. MATHEMATICAL STATISTICS I. 3 HOURS. Statistical problems and procedures, estimation, testing hypotheses, distribution theory. Prerequisite: Math 370 or 358.

372. MATHEMATICAL STATISTICS II. 3 HOURS. One-sample problems, comparison, linear models, and analysis of variance. Prerequisite: Math 371.

375. PROBABILITY. 3 HOURS. Law of large numbers, central limit theorem, recurrent events, random walks, Markov chains. Prerequisite: Math 370.

377. FINITE DIFFERENCES I. 3 HOURS. Difference formulas, finite integration, summation of series, Bernoulli and Euler polynomials, interpolation. Prerequisite: Math 112 or 133.

378. FINITE DIFFERENCES II. 3 HOURS. Approximate integration, beta and gamma functions, difference equations. Prerequisite: Math 377.

380. PROBLEMS IN GRAPH THEORY. 4 HOURS. May be substituted for Systems Engineering 460. Credit is not given for both Mathematics 380 and Systems Engineering 460. Same as Quantitative Methods 380. Optimization problems: theory and solution. Shortest path problems. Transportation problems: maximum flows, dynamic flows, parametric flows. Matching problems: coverings, spanning trees, perfect graphs. Urban scheduling problems: traveling salesman problem, postman problem. Prerequisite: QM 376 or consent of the instructor.

381. VECTOR AND TENSOR ANALYSIS I. 3 HOURS. Algebra of vectors, vector differential calculus, differential geometry, Stokes's theorem, divergence theorem; applications to electricity, mechanics, hydrodynamics, and elasticity. Prerequisite: Math 311 or 314.

382. VECTOR AND TENSOR ANALYSIS II. 3 HOURS. Transformation properties, covariant and contravariant tensors, differential geometry of curves and surfaces, exterior differential calculus with emphasis on aspects of interest in science and engineering. Prerequisite: Math 381.

383. INTRODUCTION TO GAME THEORY. 3 HOURS. Matrix games, saddle point, mixed strategies, zero-sum-two-person games, minimax theorem, examples from parlor games, poker, war games; computing value and optimal strategies using simplex method. Prerequisite: Math 370 or consent of the instructor.

385. LAPLACE TRANSFORM. 3 HOURS. The Laplace transform and its inverse; properties of the transform; linear differential equations (ordinary and partial); linear difference equations, gamma, error, and Bessel functions; asymptotic series; nonelementary integrals; integral equations; Hankel transforms. Prerequisite: Math 330.

387. NUMERICAL ANALYSIS I. 3 HOURS. A comprehensive introduction to linear numerical analysis. Computational methods and error analysis of matrix in-

version, eigenvalues and eigenvectors, and linear approximations. Prerequisites: Math 133 and 194 or 195.

388. NUMERICAL ANALYSIS II. 3 HOURS. Continues Mathematics 387. Prerequisite: Math 387.

389. NUMERICAL ANALYSIS III. 3 HOURS. Numerical integration and differentiation. Quadrature in n dimensions. Numerical integration of ordinary differential equations. Prerequisite: Math 388.

391. BOOLEAN ALGEBRA AND SWITCHING THEORY. 3 HOURS. Sets, relations, functions, equivalence relations, abstract Boolean algebra. Applications of Boolean algebra. Minimization of Boolean functions. Representation of finite Boolean algebras. Prerequisite: Math 310 or 313 or 340.

392. INTRODUCTION TO AUTOMATA THEORY. 3 HOURS. Boolean rings and lattices as Boolean algebras. Synchronous sequential circuits. Mealy and Moore models of automata. Regular sets. Prerequisite: Math 391.

393. AUTOMATA AND LANGUAGES. 3 HOURS. Types of automata and their events. The semigroup of an automaton. Basic decomposition theory. Introduction to formal languages. Grammars of types 0, 1, 2, 3. Properties of context-free languages. Prerequisite: Math 392.

394. SIMULATION LANGUAGES. 3 HOURS. Digital simulation of complex systems; general purpose and special simulation languages and their useful properties, their design and implementation. A comparison and evaluation of special languages, such as GPSS II, SIMPSCRIPT, GASP, SIMPAC, DYNAMO, and SIMULATE; application of at least one of them in a term project. Prerequisites: Math 280, 281 or the equivalents.

395. LIST-PROCESSING LANGUAGES. 3 HOURS. List- and string-processing languages, such as IPLV, SLIP, COMIT, SNOBOL, and LISP, from the user's point of view. Applications to nonnumeric problems, such as symbolic formula manipulation, information retrieval, and pattern recognition. Prerequisites: Math 280, 281 or the equivalents.

396. DESIGN OF COMPILERS. 3 HOURS. Design and implementation of algebraic compilers for a modern digital computer. Prerequisites: Math 280, 281.

397. COMPUTER OPERATING SYSTEMS. 3 HOURS. Problems of planning and implementing an operating system for a modern digital computer to utilize its power to the fullest possible extent. Prerequisite: Math 281.

398. SPECIAL TOPICS IN MATHEMATICS. 1 TO 4 HOURS. May be repeated for credit. Course content is announced prior to each term in which it is given. Prerequisite: Consent of the instructor.

399. HONORS IN MATHEMATICS. 3 HOURS. May be repeated for credit. Seminars on special topics and advanced problems permit students majoring in mathematics to do independent study under the guidance of senior members of the staff. Prerequisites: Math 312 and 342 or consent of the instructor.

Music

Professors: Richard A. Monaco, DMA, Head of the Department.

Associate Professors: William Kaplan, DMus; Richard Norton, PhD; Richard A. Wang, MM.

Assistant Professors: Richard Billingham, DMA; Melvin Burks, MEd (Adjunct); Euana Gangware, MMus; Nicholas Valenziano, DMA; Victor Weber, PhD.

Instructors: Marie Goodkin, MMus (Visiting); Bruce Hayden, MEd (Adjunct); David Stigberg, MMus; Charles Walton, MEd (Adjunct).

Lecturers: Harriette Tiegreen.

Students must pass a placement examination to qualify as music majors or to elect a minor field of specialization in the Department of Music. Those who fail this examination may petition the department for individual consultation.

Credit earned in Music 100 may not be applied toward either the major or the minor field of specialization.

Major—for the Bachelor of Arts, 60 hours, including:
Music 101, 102, 103, 104, 105, 106, 110, 170, 171,
201, 202, 203, 204, 205, 206, 230, 231.
232, 300, 301, 302 and 3 hours to be selected
from the following:[1] 151, 152, 153, 154, 155, 156, 158, 159

Departmental Distinction: A candidate must be eligible for College Honors and must have an average of 4.50 in all courses taken in the Department of Music.

Minor—Students from other departments who wish to minor in music must take 32 hours, including:
Music 101, 102, 103, 104, 105, 106,
170, 230, 232, and two hours from
Music 151, 152, 153, 154, 156, 158, 171

Courses (Mus)

100. FUNDAMENTALS OF MUSIC THEORY. 4 HOURS. For the general student. Notation, metrical organization and rhythmic structure, scales and key signatures, intervals, triads, ear training, and sight singing.

101. THEORY OF MUSIC. 3 HOURS. Summary of fundamentals of music theory, melodic analysis, introduction to harmony, and related keyboard drill. Prerequisites: Approval of the department by examination or audition and concurrent registration in Mus 104 and 170.

102. THEORY OF MUSIC. 3 HOURS. Triads, dominant sevenths and their inversion; introduction to nonharmonic tones and elementary modulation; small two-part and three-part forms; harmonic analysis; related keyboard drill. Prerequisite: Mus 101 or the equivalent.

1. No more than 1 hour of credit earned in any term may be applied toward the 3-hour requirement in these courses.

103. THEORY OF MUSIC. 3 HOURS. Secondary dominants and nondominant sevenths, continuation of nonharmonic tones and modulation; larger binary and ternary forms; related harmonic analysis and keyboard drill. Prerequisite: Mus 102 or the equivalent.

104. EAR TRAINING. 1 HOUR. The development of aural perception and sight-singing skills; material is correlated with that in Music 101. Prerequisite: Concurrent registration in Mus 101.

105. EAR TRAINING. 1 HOUR. The development of aural perception and sight-singing skills; material is correlated with that in Music 102. Prerequisite: Mus 104 or the equivalent.

106. EAR TRAINING. 1 HOUR. The development of aural perception and sight-singing skills; material is correlated with that in Music 103. Prerequisite: Mus 105 or the equivalent.

110. CONVOCATION/RECITAL. 0 HOURS. Required of all music majors. A weekly convocation for performances or lectures by students, faculty, or visiting artists. Prerequisite: Music major.

130. INTRODUCTION TO MUSIC I. 4 HOURS. For the general student. May not be taken for credit by music majors or minors. The principal elements of music; designed to develop an understanding of musical values.

131. INTRODUCTION TO MUSIC II. 4 HOURS. For the general student. May not be taken for credit by music majors or minors. A survey of principal style periods and their chief forms. Prerequisite: Mus 130.

151. CONCERT BAND. 1 HOUR. May be repeated for a maximum of 12 hours of credit. Introduction to all types of band literature. Regular performances throughout the school year. Field trips may be required. Prerequisite: Consent of the instructor.

152. INSTRUMENTAL ENSEMBLES. 1 HOUR. May be repeated for a maximum of 12 hours of credit. Performance of wind and string ensemble literature of varied types. Prerequisite: Consent of the instructor.

153. CHOIR. 1 HOUR. May be repeated for a maximum of 12 hours of credit. Introduction to important choral literature of all periods. Regular performances throughout the school year. Field trips may be required. Prerequisite: Consent of the instructor.

154. CHAMBER CHOIR. 1 HOUR. May be repeated for a maximum of 12 hours of credit. Select group of approximately 30 singers. Performance of music literature of all periods composed for small ensembles. Field trips may be required. Prerequisite: Consent of the instructor.

155. MADRIGAL SINGERS. 1 HOUR. May be repeated for a maximum of 12 hours of credit. Small, very select group. Performance of music literature primarily of the pre-Baroque periods. Prerequisite: Consent of the instructor.

156. CHORUS. 1 HOUR. May be repeated for a maximum of 12 hours of credit. Ensemble singing primarily for average and beginning singers. Stress on choral technique and vocal development. Prerequisite: Consent of the instructor.

159. JAZZ LABORATORY ENSEMBLE. 1 HOUR. May be repeated for credit. Same as Black Studies 159. Practical experience in preparation and performance of jazz compositions and arrangements; improvisational procedures. Regular

performances throughout the school year. Field trips may be required. Prerequisite: Consent of the instructor, determined by an audition.

170. PIANO I. 2 HOURS. Style and interpretation in performance; the development of keyboard skills in sight reading, transposition, improvisation, and ensemble playing. Must be repeated three times or until the minimum level of performance is certified by a department jury examination. No more than 6 credit hours may be earned. Prerequisite: Approval of the department.

171. PIANO II. 2 HOURS. Continues Music 170. Must be repeated three times or until the minimum level of performance is certified by a department jury examination. No more than 6 credit hours may be earned. Prerequisites: Mus 170 and approval of the department.

180. MUSIC PERFORMANCE. 2 HOURS. May be repeated for credit. Private instruction in voice, woodwinds, brass, strings, percussion, and keyboard instruments. Prerequisites: Music major or minor or concurrent enrollment in a performing University organization and approval of the department.

201. THEORY OF MUSIC. 3 HOURS. Continuation of nondominant seventh chords; introduction to ninth, eleventh, thirteenth chords, and chromatic harmony; analysis of single-movement forms; harmonic analysis of music from the eighteenth and early nineteenth centuries; related keyboard drill. Prerequisite: A grade of C or better in Mus 103 and 106 or the equivalents.

202. THEORY OF MUSIC. 3 HOURS. Continuation of chromatic harmony; harmonic and structural analysis of music from the middle to the late nineteenth century; related keyboard drill. Prerequisite: Mus 201 or the equivalent.

203. THEORY OF MUSIC. 3 HOURS. Harmony from the late nineteenth to the early twentieth centuries; harmonic and structural analysis; related keyboard drill. Prerequisite: Mus 202 or the equivalent.

204. EAR TRAINING. 1 HOUR. The development of aural perception and sight-singing skills; material is correlated with that in Music 201. Prerequisite: Mus 106 or the equivalent.

205. EAR TRAINING. 1 HOUR. The development of aural perception and sight-singing skills; material is correlated with that in Music 202. Prerequisite: Mus 204 or the equivalent.

206. EAR TRAINING. 1 HOUR. The development of aural perception and sight-singing skills; material is correlated with that in Music 203. Prerequisite: Mus 205 or the equivalent.

209. INTRODUCTION TO BLUES AND JAZZ. 4 HOURS. Historical survey of principal performers, styles, and forms of two Afro-American arts. Prerequisites: Sophomore standing and either Mus 130 or the ability to read music.

214. MUSIC IN THE UNITED STATES. 4 HOURS. Historical survey from the *Bay Psalm Book* to the present. Prerequisite: Sophomore standing.

215. OPERA. 4 HOURS. Historical survey tracing the growth and development of opera from its beginnings to the present. Prerequisite: Sophomore standing.

216. CHAMBER MUSIC. 4 HOURS, Growth and development from the Baroque period to the present. Prerequisite: Sophomore standing.

217. THE SYMPHONY. 4 HOURS. Historical survey of the growth and development of the symphony from its beginnings to the present. Prerequisite: Sophomore astanding.

218. THE CONCERTO. 4 HOURS. Historical survey tracing the growth and development of the concerto from its beginnings to the present. Prerequisite: Sophomore standing.

219. KEYBOARD LITERATURE. 4 HOURS. Historical survey tracing the growth and development of keyboard literature from Mozart through Debussy. Prerequisite: Sophomore standing.

220. EXPRESSIONISM. 4 HOURS. Expressionism as one reaction to the cultural crisis of the early twentieth century centering on the music of Schonberg, Berg, and Webern. Prerequisite: Sophomore standing.

230. MUSIC HISTORY I. 4 HOURS. Middle Ages and Renaissance; a general survey from monophony to 1600. Prerequisites: Junior standing and Mus 103, 106.

231. MUSIC HISTORY II. 4 HOURS. Baroque and classical; a general survey from 1600 to 1825. Prerequisite: Mus 230.

232. MUSIC HISTORY III. 4 HOURS. Romantic and twentieth-century; a general survey from about 1825 to the present. Prerequisite: Mus 231.

240. MUSIC OF THE WORLD'S PEOPLES. 4 HOURS. An introductory course. The range and variety of the musical traditions of the world and exploration of various approaches to their study. Prerequisite: Sophomore standing.

241. STUDIES IN THE MUSIC OF THE WORLD'S PEOPLES. 4 HOURS. May be repeated. Study of a single topic, such as the music of a selected geographic area, a specific musical tradition, or a specific musical phenomenon, such as improvisation, as practiced in several traditions. Topic varies each term. Prerequisite: Sophomore standing.

249. MUSIC SKILLS AND RUDIMENTS. 4 HOURS. Open only to students in the College of Education. Notation and elementary music theory coupled with the development of basic performance skills on piano and recorder; melodic and rhythmic dictation and sight-singing. Prerequisite: Junior standing.

250. MUSIC FOR ELEMENTARY TEACHERS. 4 HOURS. Open only to students in the College of Education. Required for state elementary teaching certificates. Materials and methods for teaching basic music concepts through creating and reading music; playing instruments, listening, singing; body movement. Prerequisite: Mus 249 or proficiency examination.

288. THE INTELLECTUAL REVOLUTION OF THE SEVENTEENTH AND EIGHTEENTH CENTURIES AS VIEWED THROUGH THE ARTS. 4 HOURS. Same as History of Architecture and Art 288 and Humanities 288. Evidence in the visual arts and music of the impact of the new cosmology on men's minds, imaginations, and emotions. Prerequisite: Sophomore standing.

289. NEW PERCEPTIONS IN VISUAL ARTS, MUSIC, AND SCIENCE. 4 HOURS. Same as Humanities 289. The extended sensory range of the twentieth century as represented in the visual arts, music, and science. Prerequisite: Sophomore standing.

298. SELECTED TOPICS IN MUSIC. 4 HOURS. May be repeated for a maximum of 12 hours of credit. Intensive study in specialized areas of music history, music theory, and musicology. Prerequisites vary according to the topic.

299. INDIVIDUAL STUDY. 1 TO 6 HOURS. May be repeated for credit for a maximum of 8 hours. Selected topics for individual investigation. This course number may be used for student-initiated courses. Prerequisites: Mus 203, 232, and approval of the department.

300. EIGHTEENTH-CENTURY COUNTERPOINT. 3 HOURS. Middle-to-late Baroque music. Analysis of representative scores and written assignments in eighteenth-century contrapuntal style. Prerequisites: Mus 203 and 206 or approval of the department.

301. SIXTEENTH-CENTURY COUNTERPOINT. 3 HOURS. Late Renaissance music. Analysis of representative scores and written assignments in sixteenth-century contrapuntal style. Prerequisite: Mus 300 or approval of the department.

302. FORM AND ANALYSIS. 3 HOURS. The melodic, rhythmic, harmonic, and structural analytic procedures of traditional musical form. Analysis of representative scores from the eighteenth to the twentieth centuries. Prerequisite: Mus 301.

303. COMPOSITION I. 4 HOURS. Class and individual instruction in the basic techniques of twentieth-century composition. Practice in the use of twentieth-century musical materials. Prerequisites: Mus 203, 206.

304. COMPOSITION II. 4 HOURS. Continues instruction in the basic techniques of twentieth-century composition. Prerequisite: Mus 303.

305. COMPOSITION III. 4 HOURS. Continues Music 304. Introduction to basic techniques of electronic music. Prerequisite: Mus 304.

310. CONDUCTING I. 2 HOURS. The basic techniques. The use of the baton; beat patterns; division of beats; starting and stopping; the left hand; dynamics; fermatas. Conducting in class. Prerequisites: Mus 203, 206.

311. CONDUCTING II. 2 HOURS. Continued study of the basic techniques; solos and recitatives; metric relationships. Elementary study of the score as to form and harmonic content. Development of conducting techniques through use of records and actual conducting of band or choral ensembles. Prerequisite: Mus 310.

320. PROSEMINAR ON MUSIC. 2 TO 4 HOURS. May be repeated for credit for a maximum of 12 hours. Selected topics for intensive study in specialized areas of musicology or music theory. Prerequisite: Senior standing as a music major.

330. MUSIC AS EXPERIENCE. 4 HOURS. The musical experience as found in the writings of theorists, composers, musicians, historians, critics, and philosophers. Prerequisites: Junior standing, Mus 130, and one 200-level course in music.

Native American Studies

Associate Professors: David L. Beaulieu, Director of the Program.

Assistant Professors: Chester J. Eagleman.

Minor—32 hours, distributed as follows:
Native American Studies 152, 221, 275, 371
16 additional hours in Native American studies, of which at least 8 must be at the 200 or 300 level
A maximum of 8 hours of a single course repeatable for credit may be counted toward the minor

Courses (NASt)

106. ARTS OF THE NATIVE AMERICAN. 4 HOURS. Same as Art 106. Stages of cultural development involving mythology, religion, ritual, dance, prose, and poetry from the past to the present. Projects and lecture.

150. INTRODUCTION TO ARCHEOLOGY. 4 HOURS. Same as Anthropology 150. Required for anthropology majors. General survey of world archeology; special references to the origins and development of Old World cultures.

152. INTRODUCTION TO NATIVE AMERICAN HISTORY. 4 HOURS. Same as History 152. Introduction to history and historical methods through the study of Native American history. Particular attention to the use of primary sources in reconstructing the past.

160. INTRODUCTION TO SOCIAL ANTHROPOLOGY. 4 HOURS. Same as Anthropology 160. Required for anthropology majors. Survey of selected cultures of the world; emphasis on concepts and methods of ethnology and social anthropology.

165. INTRODUCTION TO RACIAL AND ETHNIC DIMENSIONS OF AMERICAN LITERATURE. 4 HOURS. Same as English 165. Selections from the fiction, drama, poetry, and nonfiction of American racial and ethnic groups.

197. TOPICS IN NATIVE AMERICAN STUDIES. 4 HOURS. May be repeated for a maximum of 12 hours. Specific topics are announced each term. Prerequisite: Consent of the instructor.

200. INTRODUCTION TO NATIVE AMERICAN EDUCATION. 4 HOURS. Same as Education 200. History of contemporary issues in Native American education in the United States. Prerequisite: NASt 152 or consent of the instructor.

208. METHODS AND TECHNIQUES OF NATIVE AMERICAN ARTS AND CRAFTS. 4 HOURS. Same as Art 208. Native arts and crafts, including beadwork, metal work, fingerweaving, and quill work.

221. TOPICS IN NATIVE AMERICANS IN CONTEMPORARY SOCIETY. 4 HOURS. May be repeated for a maximum of 12 hours. Same as Political Science 221. Evolution of twentieth-century federal, state, local, and tribal Indian policies. Current political and social issues affecting Native Americans. Specific topics are announced each term. Prerequisite: NASt 152.

250. HISTORY OF NATIVE AMERICANS IN THE UNITED STATES. 4 HOURS. Same as History 250. Dynamics of native American and white cultural contact from white settlement to the present. Prerequisite: 4 hours of history at the 100 level or junior standing or approval of the department.

252. NEW WORLD ARCHEOLOGY I. 4 HOURS. Same as Anthropology 252 and Latin American Studies 252. Introduction to the prehistoric cultures of the New World from the populating of the Americas to the beginning of the formative cultural period in the Americas. Prerequisite: NASt 150.

253. NEW WORLD ARCHEOLOGY II. 4 HOURS. Same as Anthropology 253 and Latin American Studies 253. Introduction to the prehistoric cultures of the New World from the formative cultural period to the high civilizations of Mesoamerica and South America. Prerequisite: NASt 150.

261. ETHNOGRAPHY OF MESOAMERICA. 4 HOURS. Same as Anthropology 261 and Latin American Studies 254. Preconquest civilization of Mesoamerica, the interaction of Spanish and indigenous cultures, and the present Indian cultures of this area. Prerequisite: NASt 160 or consent of the instructor.

264. ETHNOGRAPHY OF NORTH AMERICA. 4 HOURS. Same as Anthropology 264. Survey of the indigenous cultures of the Indians of North America, including some studies in culture contact. Prerequisite: NASt 160 or consent of the instructor.

265. INDIGENOUS PEOPLES OF SOUTH AMERICA. 4 HOURS. Same as Anthropology 265 and Latin American Studies 255. Survey of the indigenous cultures in South America in the ethnographic present. Prerequisite: NASt 160 or consent of the instructor.

275. PHILOSOPHY AND RELIGION OF NATIVE AMERICANS. 4 HOURS. Same as Philosophy 275 and Religious Studies 275. Survey of American Indian beliefs about nature and the spirit world and the rituals connected with these beliefs, including changes that resulted from European contact.

297. TOPICS IN NATIVE AMERICAN STUDIES. 4 HOURS. May be repeated for a maximum of 12 hours of credit. Topics are announced each term. Prerequisite: Junior standing or consent of the instructor.

299. INDEPENDENT STUDY. 2 TO 12 HOURS. May be repeated for a maximum of 12 hours of credit. Independent study under supervision of a staff member. Prerequisites: Junior standing and approval of the Native American Studies Program.

320. STUDIES IN URBAN NATIVE AMERICANS. 4 HOURS. May be repeated for a maximum of 12 hours. Same as Political Science 320. Native American life in the city: involvement, problems, and responses; organizations; government structures and agencies. Specific topics are announced each term. Prerequisite: Junior standing or NASt 221.

364. PROBLEMS IN NORTH AMERICAN ETHNOLOGY. 4 HOURS. Same as Anthropology 364. Intensive reading and research on special problems of religious, economic and social systems of New World native peoples. Prerequisite: NASt 264 or consent of the instructor.

371. STUDIES IN THE ORAL TRADITION OF NATIVE AMERICANS. 4 HOURS. Same as English 371, Philosophy 371, and Religious Studies 371. Content, cultural context, and functions of oral traditions. Styles and performances. Specific topics are announced each term. Prerequisite: Junior standing or NASt 275.

Natural Sciences. See Additional Courses.

Philosophy

Myles Brand, PhD, Chairman of the Department.

Professors: George T. Dickie, PhD; Arthur I. Fine, PhD; Daniel J. Morris, PhD; Brian F. Skyrms, PhD; Irving Thalberg, PhD.

Associate Professors: Sandra L. Bartky, PhD; David C. Blumenfeld, PhD; Myles Brand, PhD; Charles Chastain, PhD; Gerald Dworkin, PhD; Dorothy L. Grover, PhD; Ralf H. Meerbote, PhD; Paul R. Teller, PhD; Leslie H. Tharp, PhD; W. Kent Wilson, PhD.

Assistant Professors: Daniel P. Berger, MA; John J. Economos, BA; Neal K. Grossman, PhD; Richard Kraut, PhD; Ihru Nahm, MA; Robert R. Page, MA.; John S. Turner, MA.

Instructors: Howard McGary, Jr., BA; Joshua T. Rabinowitz, MA

Major—for the Bachelor of Arts, 40 hours, distributed as follows:

1. Philosophy 201 and 203
2. Philosophy 102 and 211
3. One of the following sequences: Philosophy 230 and 330; 236 and 336; 240 and 340; 222 and 345.
4. One of the following sequences: Philosophy 212 and 334; 218 and 332; 235 and 314; 216 and 347.
5. Two additional courses (other than 399), at least one of which must be at the 200 level or above. Students may not enroll in 300-level courses unless either both sequence requirements have been met *or* one of the sequences has been completed and the student is currently enrolled in the 300-level course in the other sequence.

Major with Departmental Distinction—52 hours, as follows:

Requirements 1 through 4 above, plus:
Philosophy 321 *or* 343
One additional sequence from 3 or 4 above *or* two courses from Philosophy 301, 302, 304, 306, 308, 310.
One additional 300-level course
Philosophy 308 (Senior Honors Seminar)

The major with departmental distinction is designed for serious students who intend to continue studying philosophy in graduate school. Any student may declare himself or herself a candidate after completion of 16 hours of philosophy with an average of 4.00 or better. A minimum average of 4.00 will be required for granting the degree with Departmental Distinction.

Minor—20 hours in philosophy, 12 of which must be at the 200 or 300 level.

Courses (Phil)

101. INTRODUCTION TO PHILOSOPHY. 4 HOURS. Introduction to some of the main and recurring problems in philosophy. Problems discussed may include our knowledge of the existence of God, the external world, or other minds; the problems of induction and scientific laws; the nature of the mind and its relation to one's body; the source of moral obligation. Three lectures and one discussion meeting per week.

102. ELEMENTARY LOGIC. 4 HOURS. Introduction to the notions of validity and proof. Development of symbolic notation. Informal fallacies. Three lectures and one discussion meeting per week.

103. INTRODUCTION TO ETHICS. 4 HOURS. Same as Religious Studies 103. Designed to challenge students to clarify and defend their beliefs. In some cases the student compares personal beliefs with those of Aristotle, Kant, Mill, Nietzsche, or other classical authors. In other cases, such recurring problems as the relation between morality and self-interest, morality and the legitimate function of the state, or morality and custom are examined. Or the student may be challenged to clarify his beliefs about pressing moral issues, such as abortion, civil disobedience, and racism.

110. PHILOSOPHY OF SEX AND LOVE. 4 HOURS. A philosophical inquiry into the contemporary and traditional views about love and sex.

111. PHILOSOPHY THROUGH LITERATURE. 4 HOURS. Traditional problems of philosophy as they are embedded in the most interesting examples of classic and nonphilosophical literature. Poems, novels, and short stories constitute the reading base.

112. MORALITY AND THE LAW. 4 HOURS. Discussion of contemporary controversies about the moral limits of the use of the law. Topics may include privacy, aborton, paternalism, capital punishment, racism, and behavior control.

113. HAPPINESS. 4 HOURS. The most important answers given to such questions as: what is happiness, are happiness and morality divergent goals, what is the connection, if any, between a religious life and a good life. Views examined include those of Aristotle, Pascal, Kant, and Nietzsche.

114. ESTHETICS AND FILM. 4 HOURS. Introduction to esthetic problems, such as the nature of art and representation, through a philosophical examination of the film. The relevance of philosophical method to twentieth-century culture. Screenings accompany discussion.

115. DEATH. 4 HOURS. Examination of man's mortality through such questions as what is the meaning of death, is abortion, euthanasia, or suicide justifiable, should man be used as an experimental animal, what should society do with defective newborns, and is there an afterlife.

120. MUSLIM PHILOSOPHY. 4 HOURS. Same as Religious Studies 120. Survey of the development of philosophy in Islam.

121. COMPARATIVE RELIGIOUS PHILOSOPHIES. 4 HOURS. Same as Religious Studies 121. Philosophical methodology is used in the study of some of the major world religions, both East and West.

122. PHILOSOPHY OF CONSCIOUSNESS. 4 HOURS. Same as Religious Studies 122. The nature of human consciousness; emphasis on mysticism.

123. ISLAMIC MYSTICISM. 4 HOURS. Same as Religious Studies 123. Basic concepts and doctrines of Muslim mystics; their conception of self-purification, knowledge, love, and vision of God.

150. CLASSICS IN THE PHILOSOPHY OF SCIENCE. 4 HOURS. Primary sources that have decisively influenced the development of modern science and Western thought since ancient times. Prerequisite: Sophomore standing.

201. ANCIENT WESTERN PHILOSOPHY. 4 HOURS. The pre-Socratics, Plato, Aristotle, and the post-Aristotelians. Prerequisite: Junior standing or two courses in philosophy.

202. MEDIEVAL PHILOSOPHY. 4 HOURS. Reading and discussion of selected philosophical works from St. Augustine through William of Ockham. Prerequisite: Junior standing or two courses in philosophy.

203. HISTORY OF EARLY MODERN PHILOSOPHY. 4 HOURS. Development of Western philosophy from Descartes to Kant; emphasis on Descartes, Spinoza, Leibniz, Locke, Berkeley, and Hume. Prerequisite: Junior standing or two courses in philosophy.

204. PHILOSOPHICAL TOPICS IN THE LITERATURE OF BLACK PEOPLE. 4 HOURS. Same as Black Studies 204. Philosophical themes in the writings of Frederick Douglass, Solomon Northrup. Franz Fannon, and other Black writers. Prerequisite: Phil 101.

205. PHILOSOPHICAL ISSUES OF CONTEMPORARY FEMINISM. 4 HOURS. Same as Women's Studies 205. The relevance of philosophical theories, especially in the fields of ethics and political philosophy, and methods of philosophical inquiry to both the contemporary women's movement and the search on the part of both sexes for a meaningful personal identity.

206. AMERICAN PHILOSOPHY. 4 HOURS. Main currents of philosophical thought in America. Prerequisite: One course in philosophy.

210. PHILOSOPHICAL PROBLEMS IN ART AND ART APPRECIATION. 4 HOURS. Contemporary theories of esthetic objects and art. Discussions concern problems of criticism, the evaluation of art, and other topics.

211. INTRODUCTION TO FORMAL LOGIC. 4 HOURS. Introduction to first order logic with identity and elementary set theoretic concepts. Prerequisite: One course in philosophy or mathematics.

212. PHILOSOPHY OF ART. 4 HOURS. Philosophical theories of art from ancient Greece to the present. Plato, Aristotle, Longinus, Hume, Kant, Nietzsche, Dewey, and others.

214. PHILOSOPHY OF RELIGION. 4 HOURS. Same as Religious Studies 214. Philosophical inquirey into the grounds of belief, the character of religious experience, and the justification for the existence of God. Prerequisite: One course in philosophy.

215. PHILOSOPHICAL PSYCHOLOGY. 4 HOURS. Critical review of several important topics: behaviorism, the theory of action, emotions, the status of psychoanalytical explanations, determinism, dreaming, motivation. Prerequisite: One course in philosophy.

216. POLITICAL AND SOCIAL PHILOSOPHY. 4 HOURS. Same as Black Studies 216. Introduction to issues concerning political institutions and practices. Theories on how to evaluate laws and explain the obligation to obey the law.

218. INTRODUCTION TO ETHICAL THEORY. 4 HOURS. Designed to prepare the student for more advanced work in ethics. Topics include the analysis of moral judgments, the classification of ethical theories according to their formal properties, the thesis of ethical relativism, and the comparison between ethical and scientific theories. Credit in Philosophy 103 is recommended.

222. INTRODUCTION TO THE PHILOSOPHY OF SCIENCE. 4 HOURS. The nature of scientific explanation and verification. The status of scientific theories; induction and probable inference.

223. PHILOSOPHY OF HISTORY. 4 HOURS. The nature of historical knowledge, interpretations of the historical process, criticism of classical theories of history, the use of laws in historical explanations, and the question of whether history is to be taken as a social science. Prerequisite: Phil 201 or 203.

224. PHILOSOPHY OF EDUCATION. 4 HOURS. The aims of education, the relationship of ethics and the theory of knowledge to educational theory, the philosophical critique of educational institutions, and the application of philosophical ideas and systems to pedagogy. Prerequisite: Sophomore standing.

230. THEORY OF KNOWLEDGE. 4 HOURS. Basic issues concerning the nature of empirical knowledge, other minds, scientific laws, and necessary truths. Credit in Philosophy 101 is recommended.

233. SPECIAL RELATIVITY AND THE CONCEPTS OF SPACE AND TIME. 4 HOURS. Same as Physics 233. Experimental and philosophical foundations of relativity, Lorentz transformation, mass-energy equivalence, applications in physics, transformation of electric and magnetic fields, concepts of space and time. Prerequisites: Phys 131, 132, 232 or the equivalents.

235. STUDIES IN EXISTENTIALIST LITERATURE. 4 HOURS. Same as Humanities 235 and Religious Studies 235. Imaginative works by Dostoevsky, Rilke, Kafka, Sartre, and Camus; selections from Pascal, Kierkegaard, Nietzsche, Jaspers, and Tillich. Prerequisite: Junior standing or consent of the instructor.

236. METAPHYSICS. 4 HOURS. Same as Religious Studies 236. Basic issues concerning human freedom, causation, human action, the relation between mind and body, substance and attribute, universals and particulars, and the existence of God. Emphasis on varies from term to term. Credit in Philosophy 101 is recommended.

240. PHILOSOPHY OF LANGUAGE. 4 HOURS. Issues concerning the meaning and reference of linguistic expressions. Credit in Philosophy 101 is recommended.

275. PHILOSOPHY AND RELIGION OF NATIVE AMERICANS. 4 HOURS. Same as Native American Studies 275 and Religious Studies 275. Survey of American Indian beliefs about nature and the spirit world and the rituals connected with these beliefs, including changes that resulted from European contacr.

299. SEMINAR. 4 HOURS. May be taken twice. Selected topics. Prerequisites: Junior standing and approval of the department.

300. PHILOSOPHY OF SPACE AND TIME. 4 HOURS. Topics include geometry and space, contingent and necessary properties of space and time, the direction and flow of time, effects preceding their causes, and Zeno's paradoxes. Prerequisite: Two courses in philosophy or junior standing.

301. PLATO. 4 HOURS. May be repeated once for credit with the approval of the department. Careful reading of selected dialogues; emphasis on Plato's metaphysics and epistemology. Prerequisite: Two courses in philosophy or junior standing.

302. ARISTOTLE. 4 HOURS. May be repeated once for credit with the approval of the department. Careful reading of selected works; emphasis on Aristotle's metaphysics and epistemology. Prerequisite; Two courses in philosophy or junior standing.

303. CHINESE PHILOSOPHY. 4 HOURS. Same as Asian Studies 325. Development of the major philosophies. Prerequisite: Two courses in philosophy.

304. SEVENTEENTH-CENTURY RATIONALISM. 4 HOURS. May be repeated once for credit with the approval of the department. Same as Religious Studies 304. Careful readings of the works of one or more of the rationalist philosophers, such as Descartes, Spinoza, and Leibniz. Prerequisite: Two courses in philosophy or junior standing.

306. BRITISH EMPIRICISM. 4 HOURS. May be repeated for credit with the approval of the department. Careful reading of the works of one or more of the British Empiricists, such as Locke, Berkeley, and Hume. Prerequisite: Two courses in philosophy or junior standing.

308. KANT. 4 HOURS. Intensive study of Kant's metaphysics and theory of knowledge with the main readings drawn from the *Critique of Pure Reason*. Prerequisite: Two courses in philosophy or junior standing.

309. TOPICS IN THE HISTORY OF ETHICS. 4 HOURS. In-depth study of one person, such as Kant or Sidgewick, or one school of thought, such as the natural rights theorists or the utilitarians. Prerequisite: Phil 218.

310. NINETEENTH-CENTURY AND EARLY TWENTIETH-CENTURY THOUGHT. 4 HOURS. May be repeated once for credit with the approval of the department. Readings in the works of Hegel, Schelling, Fichte, Schopenhauer, Marx and Engels, J.S. Mill, Nietzsche, McTaggart, Green, Bradley, Peirce, Perry, and others. Prerequisite: Two courses in philosophy or junior standing.

311. INDUCTIVE LOGIC. 4 HOURS. Traditional and contemporary problems of induction. Inductive logic and the theory of probability. Prerequisite: Phil 211.

312. RECENT AND CONTEMPORARY PHILOSOPHY: ANALYSIS AND LOGICAL EMPIRICISM. 4 HOURS. Developments in recent philosophy that have their roots in the study of logic and language, such as logical atomism, positivism, and analytical philosophy. Prerequisite: Two courses in philosophy or junior standing.

314. RECENT AND CONTEMPORARY PHILOSOPHY: PHENOMENOLOGY AND EXISTENTIAL PHILOSOPHY. 4 HOURS. Important contributions to the phenomenological movement. Selected readings from Husserl, Heidegger, Jaspers, Sartre, Merleau-Ponty, and others. Prerequisite: Two courses in philosophy or junior standing.

315. MODERN CHINESE PHILOSOPHY. 4 HOURS. Same as Asian Studies 326. Development of recent Chinese systems of philosophy. Prerequisite: Phil 303.

321. INTRODUCTION TO FORMAL LOGIC. 4 HOURS. Semantics of first order logic with identity; other topics in mathematical or philosophical logic. Prerequisite: Phil 211 or consent of the instructor.

322. PROBLEMS IN THE FOUNDATIONS OF LOGIC AND MATHEMATICS. 4 HOURS. Survey of selected problems. Prerequisite: Phil 211 or the equivalent.

330. TOPICS IN THEORY OF KNOWLEDGE. 4 HOURS. Intensive treatment of one or more topics, such as the analysis of empirical knowledge claims, the nature of truth, knowledge of other minds, the nature of necessary truths. Prerequisite: Phil 230.

332. TOPICS IN ETHICS AND VALUE THEORY. 4 HOURS. Same as Religious Studies 332. Intensive treatment of one or more topics, such as the analysis of moral judgments, the classification of ethical theories according to their formal properties, the thesis of ethical relativism, and the comparison between ethical and scientific theories. Prerequisite: Phil 218 or two courses in philosophy, one of which must be a 200-level course.

334. ESTHETICS. 4 HOURS. Intensive examination of such topics as the esthetic object, form in art, representation, meaning in art, and knowledge. Prerequisite: Junior standing or two courses in philosophy.

336. TOPICS IN METAPHYSICS. 4 HOURS. Intensive treatment of one or more topics, such as substance and attribute, universals and particulars, free will, human action, the relation between mind and body. Prerequisite: Phil 236.

338. PHILOSOPHICAL ANALYSIS OF THE CONCEPT OF MIND. 4 HOURS. Intensive treatment of one or more topics in the philosophy of mind, such as emotions, thoughts, intentions, and the will. Prerequisite: Junior standing or two course in philosophy.

340. TOPICS IN THE PHILOSOPHY OF LANGUAGE. 4 HOURS. Intensive treatment of one or more topics, such as meaning, reference, and the structure of language. Prerequisites: Phil 211, 240.

341. PHILOSOPHICAL PROBLEMS IN THE SOCIAL SCIENCES. 4 HOURS. Critical examination of some important philosophical problems in the foundations of the social sciences: general methodological problems or specific philosophical problems arising from some specific theories, such as decision theory, theory of learning, information theory, or other theories. Exact content varies from year to year. Prerequisite: Two courses in philosophy or consent of the instructor.

343. FORMAL LOGIC I. 4 HOURS. Same as Mathematics 343. Propositional logic, logic of quantifiers, and identity and completeness. Prerequisite: Consent of the instructor; none for mathematics majors.

344. FORMAL LOGIC II. 4 HOURS. Same as Mathematics 344. Continues Philosophy 343. Mathematical analysis of decidability and computability. Arithmetization of syntax. Incompleteness and undefinability theorems. Introduction to axiomatic set theory. Prerequisite: Phil 343.

345. PHILOSOPHICAL PROBLEMS OF THE SCIENCES. 4 HOURS. May be repeated for credit with the approval of the department. Reading and discussion

of selected works on the aims and methods of science, the status of scientific theories, natural laws and theoretical entities, and the nature of explanation. Prerequisite: Junior standing or two courses in philosophy.

347. PHILOSOPHY OF LAW. 4 HOURS. Intensive treatment of one or more topics, such as systems of criminal and civil laws, distinction between legislation and judicial decision-making, moral sources, justification of statutes and decisions, criminal and civil responsibility, *mens rea*, theories of punishment, civil disobedience, human rights and civil rights, civil liberties. Prerequisite: Junior standing or two courses in philosophy.

351. PROBLEMS IN THE PHILOSOPHY OF MATHEMATICS. 4 HOURS. Intensive study of a particular problem or nexus of problems. Problems vary from term to term. Prerequisite: 8 hours of either mathematics or logic or consent of the instructor.

371. STUDIES IN THE ORAL TRADITION OF NATIVE AMERICANS. 4 HOURS. Same as English 371, Native American Studies 371, and Religious Studies 371. Content, cultural context, and functions of oral traditions. Styles and performances. Specific topics are announced each term. Prerequisite: Junior standing or Phil 275.

398. SENIOR SEMINAR. 4 HOURS. Individual research projects are reported to the seminar. Students who intend to do graduate work in philosophy are expected to take this course. Prerequisites: Senior standing, Phil 201, 203, 211, and at least one 300-level course.

399. INDEPENDENT STUDY. 1 TO 8 HOURS. Independent study, under the supervision of a staff member, of a topic not covered in the regular curriculum. The course is offered at the request of the student and only at the discretion of the staff members concerned. Prerequisite: Approval of the department.

Physics

Professors: Swaminatha Sundaram, DSc, Head of the Department; Seymour Bernstein, PhD; Arnold R. Bodmer, PhD; Warren B. Cheston, PhD; James W. Garland, PhD; James S. Kouvel, PhD; Edward B. McNeil, PhD; Antonio Pagnamenta, PhD; Ora L. Railsback, PhD (Emeritus); R. Curtis Retherford, PhD (Emeritus); Ram R. Sharma; PhD; David J. Vezzetti, PhD; Herman B. Weissman, PhD; Lester Winsberg, PhD.

Associate Professors: Larry L. Abels, PhD; Robert J. Abrams, PhD; Stanley Aks, PhD; William R. Anderson, MS; Richard A. Carhart, PhD; Helmut Claus, PhD; Alan S. Edelstein, PhD; Howard S. Goldberg, PhD; Gloria T. Hoff, PhD; Herman J. Johnson, MS; Stephan J. Krieger, PhD; Arthur L. Licht, PhD; Donald W. McLeod, PhD; Seymour Margulies, PhD; William J. Otting, PhD; John N. Pappademos, PhD; David S. Schreiber, PhD; Harold M. Skadeland, MA; Julius Solomon, PhD; Ben Varga, PhD.

Assistant Professors: Jared W. Haslett, MS; Isidor Lerner, MA (Emeritus); Fischel E. Moraine, *Dipl. In.* (Emeritus); Vincent J. Tekippe, PhD.

Major—for the Bachelor of Arts, 56 hours, including:

Physics 111, 112, 113, 114	19 hours
221, 222	5
301, 302	8
321, 322	8
341, 361	8

plus two 300-level courses to be chosen in consultation with the adviser.

Required Prerequisite and Collateral Courses
Mathematics 104 and 105 (if needed), 130, 131, 132, 133, 220, 310, 311
Chemistry 112, 113, 114

Note: Students may substitute, on the advice of the department, Chemistry 117, 118, 119 for Chemistry 112, 113, 114 if total hours required in their program do not exceed 108.

Departmental Distinction: Distinction in Physics is awarded to students who achieve College Honors and an overall minimum grade point average of 4.50 in upper division physics and mathematics courses.

Students who qualify for Departmental Distinction are recommended for High or Highest Distinction on the basis of grade point average and/or high performance in Physics 291, 292, or 293, as described below.

High Distinction: A minimum overall grade point average of 4.70 in upper division physics and mathematics courses or a minimum overall grade point average of 4.50 in upper division physics and mathematics courses and high performance in Physics 291, 292, or 293, as judged by the instructor of the course.

Highest Distinction: A minimum overall grade point average of 4.80 in upper division physics and mathematics courses or a minimum overall grade point average of 4.70 in upper division physics and mathematics courses and high performance in Physics 291, 292, or 293, as judged by the instructor of the course.

Minor—Students from other departments who wish to minor in physics must take Physics 111, 112, 113, 114, 221, 222, 301, and one course from Physics 321, 371, 331, 341, 302.

Teacher Education in Physics: Requirements for Teaching in Secondary Schools

Major—for the Bachelor of Science, 56 hours, including:	
Physics 111, 112, 113, 114	19 hours
221, 222	5
301, 302	8
321, 322	8
341, 361	8
Supporting Courses—45 hours	
Mathematics 130, 131, 132, 133	20 hours
220, 310, 311	10
Chemistry 112, 113, 114	15
Plus two physics laboratory courses, chosen in consultation with the adviser.	
Minor (Second field of specialization)— 31 hours	
Physics 111, 112, 113, 114	19 hours
221	4
Physics electives	8

Physics Curriculum

The Bachelor of Science in Physics is awarded students who successfully complete this curriculum in the College of Liberal Arts and Sciences.

180 hours, exclusive of physical education and basic military science, distributed as follows:

English Composition 101, 102	8 hours
Chemistry 117, 118, 119	18
Foreign language (the equivalent of two years in a single language, at the college level)	0-24
Social Sciences	12
Humanities	12
Mathematics 130, 131, 132, 133	20
220, 310, 311	10
Physics 111, 112, 113, 114	19
221, 222	5
301, 302, 303, 304	16
321, 322, 341, 342	16
361, 371, 381, 382	16
Electives	6-30

Courses (Phys)

101. GENERAL PHYSICS (MECHANICS AND HEAT). 5 HOURS. For students in the College of Liberal Arts and Sciences and in the Department of Architecture. Dynamics of solids and heat. Lectures with demonstrations and recitations; laboratory. Prerequisite: Trigonometry.

102. GENERAL PHYSICS (ELECTRICITY, MAGNETISM, AND WAVES). 5 HOURS. For students in the College of Liberal Arts and Sciences and in the Department of Architecture. Electricity and magnetism, particles and fields, electromagnetic waves, and behavior of waves. Lectures with demonstrations and recitations; laboratory. Prerequisite: Phys 101.

103. GENERAL PHYSICS (MODERN PHYSICS). 5 HOURS. For students in the College of Liberal Arts and Sciences and in the Department of Architecture. Relativity, quantum mechanics, atomic structure, and the nucleus. Lectures with demonstrations and recitations; laboratory. Prerequisite: Phys 102.

111. GENERAL PHYSICS I (MECHANICS). 4 HOURS. Scalars and vectors; kinematics in one and two dimensions, conservation of momentum; Newton's laws; inertial systems, circular motion; work, potential energy, conservation of energy; harmonic motion. Lecture and discussion. Prerequisite: Credit or registration in Math 131.

112. GENERAL PHYSICS II (MECHANICS, THERMODYNAMICS). 5 HOURS. Angular momentum, moment of inertia; gravitational force, planetary motion; introduction to the physics of fluids; first and second laws of thermodynamics; the ideal gas; kinetic theory of gases. Lecture, discussion, and laboratory. Prerequisites: Phys 111 and credit or registration in Math 132.

113. GENERAL PHYSICS III (ELECTRICITY AND MAGNETISM). 5 HOURS. Coulomb's law, Gauss's law; electrostatic field, potential; capacitance, resistance, DC circuits; the magnetic force, Biot-Savart law, Ampere's law; motion of charged particles in electromagnetic fields; electromagnetic induction. Lecture, discussion, and laboratory. Prerequisites: Phys 112 and credit or registration in Math 133.

114. GENERAL PHYSICS IV (WAVE PHENOMENA AND RELATIVITY). 5 HOURS. Displacement current, Maxwell's equations; basic wave behavior; the wave equation; sound, water, and electromagnetic waves; reflection, refraction, interference, diffraction; geometrical optics; introduction to the special theory of relativity. Lecture, discussion, and laboratory. Prerequisite: Phys 113.

121. NATURAL SCIENCES—THE PHYSICAL UNIVERSE. 4 HOURS. Same as Natural Sciences 101. Atomic theory to cosmology; physical laws and the nature of matter in the evolving universe. Prerequisite: High school algebra.

131. CLASSICAL PHYSICS I: MECHANICS. 4 HOURS. Forces and acceleration in one and two dimensions. Inertial reference frames, rotating coordinate systems. Newtonian mechanics; graphical techniques and differentiation. Impulse and integration; momentum, conservation of momentum; energy, conservative forces, potential energy; harmonic motion. Kepler's laws, planetary motion, the gravitational force. Lecture and laboratory. Prerequisite: Credit or registration in Math 131 or approval of the department.

132. CLASSICAL PHYSICS II: ELECTRODYNAMICS. 3 HOURS. Harmonic motion; gravitation, orbital motion; Coulomb's law, the electric field; potential and capacitance, dielectrics; effects and sources of magnetic fields; electromagnetic induction; inductance. Prerequisite: Phys 131 or approval of the department.

209. INTRODUCTION TO ASTRONOMY. 4 HOURS. Same as Geography 209. An introductory and essentially nonmathematical course for superior students who are not science majors. Prerequisite: Consent of the instructor.

210. ASTROPHYSICS. 3 HOURS. A quantitative study, including determination of stellar parameters, stellar evolution from proto stars to red giants, white dwarfs, neutron stars, and black holes. Introduction to general relativity and cosmology. The course is noncalculus but uses materials and concepts learned in Physics 101 through 103. Prerequisite: Phys 103.

221. MODERN PHYSICS. 4 HOURS. Kinetic theory, atomic nature of matter; thermal radiation, photons, photoelectric effect; atomic spectra, Bohr model of the atom; wave and particle aspects of matter; elements of nuclear and particle physics. Lecture and discussion. Prerequisite: Phys 114.

222. MODERN PHYSICS LABORATORY. 1 HOUR. Experiments in modern physics, including the photoelectric effect, Frank-Hertz experiment, radioactive decays, and others. Prerequisite: Phys 221.

231. MODERN PHYSICS I. 4 HOURS. Waves and oscillations, Maxwell's equations, special relativity, wave-particle duality, Compton effect, photoelectric effect, electron diffraction. Prerequisite: Phys 132 or approval of the department.

232. MODERN PHYSICS II. 5 HOURS. Quantum mechanical theory, Schroedinger equation, wave functions and their significance, eigenvalues, complex atoms, molecular binding, statistics of identical particles, solids, superconductivity, lasers, elements of nuclear physics. Prerequisite: Phys 231.

233. SPECIAL RELATIVITY AND THE CONCEPTS OF SPACE AND TIME. 4 HOURS. Same as Philosophy 233. Experimental and philosophical foundations of relativity, Lorentz transformation, mass-energy equivalence, applications in physics, transformation of electric and magnetic fields, concepts of space and time. Prerequisites: Phys 131, 132, 232 or the equivalents.

291. SEMINAR. 1 HOUR. Topics to be arranged. Prerequisites: Senior standing and consent of the instructor.

292. UNDERGRADUATE RESEARCH. 2 TO 4 HOURS. Research under the close supervision of a faculty member. Prerequisites: Senior standing and consent of the instructor.

293. SPECIAL PROBLEMS. 2 TO 4 HOURS. Special problems or reading by special arrangement with the faculty. Prerequisites: Senior standing and consent of the instructor.

301. ELECTRICITY AND MAGNETISM I. 4 HOURS. Vector calculus; electrostatic potential and fields in vacuum and material media; energy concepts; boundary value problems. Prerequisites: Phys 114, Math 220.

302. ELECTRICITY AND MAGNETISM II. 4 HOURS. Magnetostatics; vector potential, magnetic materials; time-varying fields and electromagnetic induction; Maxwell's equations. Prerequisite: Phys 301.

303. ELECTRICITY AND MAGNETISM III. 4 HOURS. Propagation of electromagnetic waves; reflection, refraction, and dispersion; guided waves; radiation; selected topics. Prerequisite: Phys 302.

304. ELECTRONICS I. 4 HOURS. Theory of electronic devices, linear and nonlinear analysis, applications of vacuum and semiconductor devices to circuits, amplifiers, biasing, feedback, oscillators, and special circuits. Prerequisite: Phys 113.

305. ELECTRONICS II. 4 HOURS. Pulse-shaping networks, logic circuits, control circuits, distributed amplifiers, special problems of transducers, special signal-to-noise techniques. Prerequisite: Phys 304.

321. QUANTUM MECHANICS I. 4 HOURS. The basic theory of the mechanics governing microscopic systems. Wave functions; probability density; operators, the Schroedinger equation with examples in one and three dimensions. Prerequisites: Phys 114, 221 or approval of the department and Math 220. Credit or registration in Mathematics 310 is recommended.

322. QUANTUM MECHANICS II. 4 HOURS. Mathematical structure of quantum mechanics; observables for a quantum state; angular momentum; perturbation theory; the Born approximation; the variational method; transition probabilities. Prerequisite: Phys 321. Credit or registration in Mathematics 311 is recommended.

323. ELEMENTARY SOLID STATE PHYSICS. 4 HOURS. Individual projects are required. Crystal structure, thermal and dielectric properties of solids, free electron model of metals, band theory, semiconductor physics, dislocations and strength of solids. Prerequisite: Phys 322.

331. NUCLEAR PHYSICS. 4 HOURS. Principal properties of nucleons and nuclei: sizes, shapes, energies, stability, decays, reactions, and fission. Nuclear forces: the deutron; nucleon-nucleon scattering; charge independence. Nuclear structure: spectra; shell and collective models. Nuclear reactions: the compound nucleus and direct reactions. Prerequisite: Phys 322 or approval of the department.

332. INTRODUCTION TO PARTICLE PHYSICS. 4 HOURS. Properties of the known elementary particles and their basic interactions. Accelerators and detectors. The discrete conservation laws with applications. Antiparticles, strangeness. Prerequisites: Phys 321 and 322 or approval of the department.

341. THEORETICAL MECHANICS I. 4 HOURS. No credit for graduate physics majors. Individual projects are required. Motion of a particle in one, two, and three dimensions, Kepler's laws and planetary motion, scattering of particles, conversion between laboratory and center of mass coordinate systems, conservation laws, motion of a rigid body in two dimensions. Prerequisites: Phys 114 or approval of the department and Math 220.

342. THEORETICAL MECHANICS II. 4 HOURS. Individual projects are required. Statics of extended systems, moving coordinate frames, fictitious forces and conservation laws, special theory of relativity, mechanics of continuous media. Prerequisite: Phys 341.

343. THEORETICAL MECHANICS III. 4 HOURS. Individual projects are required. Rigid-body motion in three dimensions, motion in gravitational fields, generalized coordinates and Lagrange and Hamilton equations, equations of constraint, small vibration theory. Prerequisite: Phys 342.

361. THERMODYNAMICS. 4 HOURS. Thermodynamic variables, equilibrium, zeroth law of thermodynamics, isolated systems, the first law, Kelvin and Clausius statements of second law, Clausius inequality, irreversible criteria, equations of state, Clausius-Clapeyron equation, multicomponent systems, the third law, selected applications to physical systems. Prerequisite: Phys 114.

362. STATISTICAL PHYSICS. 4 HOURS. Kinetic theory of dilute gases, elementary statistical concepts, equilibrium between interacting systems; temperature, entropy, statistical calculation of thermodynamic quantities, the microcanonical and canonical ensembles, quantum statistics of ideal gases, selected applications to physical systems. Prerequsitie: Phys 361.

366. INTRODUCTION TO THE MATHEMATICAL METHODS OF THEORETICAL PHYSICS I. 4 HOURS. Same as Mathematics 366. The traditional mathematical methods of theoretical physics from an intuitive point of view. Applications to problem solving in electrostatics and classical and quantum mechanics. Matrices and linear transformations, Fourier analysis, the partial differential equations of physics, and Sturm-Liouville theory. Introduction to special functions frequently encountered in physics. Prerequisites: Math 220, 310.

367. INTRODUCTION TO THE MATHEMATICAL METHODS OF THEORETICAL PHYSICS II. 4 HOURS. Same as Mathematics 367. The traditional mathematical methods of theoretical physics from an intuitive point of view. Applications to problem-solving in electrostatics, electrodynamics, and classical and quantum mechanics. The special functions frequently encountered in physics and their use in the solution of boundary value problems, power series solutions, Green's functions, contour integral representations, and additional uses. Prerequisite: Phys 366.

368. METHODS OF THEORETICAL PHYSICS. 4 HOURS. Practical calculations with Fourier transforms, residue calculus, dispersion relations. Applications of Legendre and Bessel functions. Integral equations. Prerequisite: Phys 367.

371. LIGHT (WAVE OPTICS). 4 HOURS. Wave propagation and Maxwell's equations, interference and interferometers, gratings, circular aperture, echelon, resolving power. Lecture and laboratory. Prerequisites: Phys 114 and credit or registration in Math 220.

372. LIGHT (MODERN OPTICS I). 4 HOURS. Crystals, polarized light, optics of metals, quantum theory of radiation, transition probability and oscillator strength, dispersion and scattering theory. Lecture and laboratory. Prerequisite: Phys 371.

373. LIGHT (MODERN OPTICS II). 4 HOURS. Individual projects are required. Gaussian optics and general laws, special optical systems and applications. Image formation, finite image-error theory, spot diagrams. Necessary mathematical tools for Fourier analysis and transfer functions. Prerequisite: Phys 372.

381. MODERN EXPERIMENTAL PHYSICS I. 4 HOURS. Techniques and experiments in the physics of atoms atomic nuclei, molecules, the solid state, and other areas of modern physical research. Lecture and laboratory. Prerequisite: Phys 304.

382. MODERN EXPERIMENTAL PHYSICS II. 4 HOURS. Continues Physics 381. Lecture and laboratory. Prerequisite: Phys 381.

391. PHYSICS SEMINAR. 1 TO 4 HOURS. Topics, to be arranged, cover recent developments in modern physics suitable for advanced undergraduate and graduate students. Prerequisites: Senior standing and approval of the department.

392. PHYSICS RESEARCH. 2 TO 4 HOURS. Research under the close supervision of a faculty member. Prerequisites: Senior standing and approval of the department.

393. SPECIAL PROBLEMS. 2 TO 4 HOURS. Special problems or reading in modern physics under individual arrangement with a faculty member. Prerequisites: Senior standing and consent of the instructor.

Polish. See Slavic Languages and Literatures.

Political Science

Professors: John A. Gardiner, PhD, Head of the Department; Hollis W. Barber, PhD; Twiley W. Barker, Jr., PhD; Doris A. Graber, PhD; Richard M. Johnson, PhD; Boyd R. Keenan, PhD; B.C. Koh, PhD; David C. Leege, PhD; Milton Rakove, PhD; Harry Scoble, PhD.

Associate Professors: George Beam, PhD; Don R. Bowen, PhD; Thomas J. Cook, PhD; Eugene Eidenberg, PhD; Lyman A. Kellstedt, PhD; Frank P. Scioli, Jr., PhD; Dick Simpson, PhD; Frank Tachau, PhD.

Assistant Professors: George I. Balch, PhD; Elinor R. Bowen, PhD; Anne M. Heinz, PhD; Peter R. Knauss, PhD; James Nowlan, PhD (Visiting); Robert Rakoff, PhD; Gerald Strom, PhD; Lettie M. Wenner, PhD; Laurie S. Wiseberg, PhD.

Instructors: Virginia Koontz, MA (Visiting); Kaye Miller, MA; Jeffrey Prottas, MA.

Each major will be assigned a faculty adviser during the fall term of the academic year and it is strongly recommended that the adviser be consulted and that approval of the program of study by the adviser be obtained before completing registration.

Major—for the Bachelor of Arts, 36 hours, distributed as follows:
Political Science 100 and 200
28 additional hours, at least 20 of which must be at the 200 or 300 level.
Students cannot take both Political Science 150 and 151.
A major may include up to 5 hours from related departments, chosen with the advance approval of the Department of Political Science.

Departmental Distinction: To be considered for Departmental Distinction, students must have an all-University grade point average of 4.25 and an average of 4.50

in all political science courses, present an acceptable essay written while enrolled in Political Science 299 (both course and credits must be beyond those required for the major), and pass a comprehensive examination in political science. Students working in this program must expect to enroll in Political Science 299 for at least 4 hours credit during the tenth and /or eleventh terms; thus, if they expect to graduate in June, they should enroll during the fall and/or winter quarters of their senior year. Further details may be obtained in the Department of Political Science office.

Minor—24 hours, distributed as follows:
Political Science 100 and 200
16 additional hours of political science courses, at least 12 of which must be at the 200 or 300 level, chosen in consultation with an adviser in the Department of Political Science.
Students cannot take both Political Science 150 and 151.

Courses (PolS)

100. INTRODUCTION TO POLITICAL SCIENCE I. 4 HOURS. A basic course; required for political science majors. Alternative conceptualizations of political life, commonalities and differences among political systems, explanation of individual political behavior. Emphasis on student participation in class and the writing of essays. Prerequisite: Freshman, sophomore, or junior standing. Seniors are admitted only with the consent of the instructor.

111. UNITED STATES POLITICS: CURRENT PROBLEMS AND CONTROVERSIES. 4 HOURS. A variety of current political problems are analyzed and placed in the context of past and future public policies and the development of political institutions. The nature of the problem, as formulated in current public discourse, and the various reasons responsible for conflicting policy appraisals and recommendations are stressed.

120. THE STUDY OF POLITICS: WHO RULES? 4 HOURS. A basic course; prerequisite for many upper-division political sciences courses. Introduction to the concepts and methods of political analysis, philosophy, and action. Substantive focus on the selection of political leaders in various political systems, particularly in the United States today.

121. POSSIBLE POLITICAL SYSTEMS: IDEAL AND ACTUAL. 4 HOURS. Political possibilities beyond those that currently prevail in the world are suggested and analyzed. Possible topics include various "utopian" systems (participatory democracy, the experimenting society, communes), political effects of technology (behavior modification, drugs, communications, birth control, genetics), and ongoing experiments (neighborhood democracy). Recurrent issues include human nature, inequality, stability, power, alienation, and political change. The importance and limits of various modes of speculative theorizing.

136. THE POLITICAL FILM. 4 HOURS. Analyzing popular films for political themes; major genres and their contribution to the understanding of politics and political experience in America, Europe, and the Third World.

140. POLITICS OF THE THIRD WORLD. 4 HOURS. Same as Latin American Studies 140. Major political processes and problems, such as colonialism and neocolonialism, national liberation, problems of national identity and integration, socioeconomic development, violence and revolution.

150. AMERICAN GOVERNMENT: BASIC PRINCIPLES. 4 HOURS. Students may not take both Political Science 150 and 151. Historical development and operation of the American constitutional system. Analysis of federalism, civil

liberties, and methods of popular control of government. Nature, structure, powers, and procedures of legislative, executive, and judicial departments in the state and in the nation. Basic structure of local government.

151. AMERICAN GOVERNMENT: ORGANIZATION AND POWERS. 4 HOURS. Students may not take both Political Science 150 and 151. Nature, structure, powers, and procedures of legislative, executive, and judicial departments in the state and in the nation. Basic structure of local government. Prerequisites: Enrollment in either the College of Education or the College of Liberal Arts and Sciences; secondary education student.

155. AMERICAN GOVERNMENT: BASIC PRINCIPLES. 4 HOURS. Honors course for Political Science 150. Prerequisite: University grade point average of 4.00 or above or James Scholar status.

184. INTRODUCTION TO INTERNATIONAL RELATIONS. 4 HOURS. The basic characteristics of the international system, the nature of international relations, major problems and conflicts, the attempts to solve them. Nationalism, diplomacy, and war.

200. INTRODUCTION TO POLITICAL SCIENCE II. 4 HOURS. Required for political science majors and students who intend to enroll in 300-level political science courses. Concepts and techniques essential for research on political phenomena; basic measurement theory; principles of research design; methods and techniques of data generation; applied data analysis. Prerequisite: PolS 100.

201. QUANTITATIVE STUDY OF POLITICS. 4 HOURS. Introduction to descriptive and inductive techniques essential for understanding behavioral political science. Especially recommended for students who plan to take advanced courses in political science.

202. INTRODUCTION TO POLITICAL RESEARCH. 4 HOURS. In-depth analysis of the research process. Students engage in a collective research project, examining all facets of research from design through data collecting and analysis to the writing of a research report. Prerequisites: PolS 200 and consent of the instructor; additional prerequisites are stipulated by the instructor, depending on the research topic chosen. Political Science 201 is strongly recommended.

203. INTRODUCTION TO POLICY ANALYSIS. 4 HOURS. Approaches to the analysis of public policy; works focusing on the formulation, implementation, impact, and moral implications of public policy. Prerequisite: PolS 150 or 151.

205. INTRODUCTION TO URBAN POLITICS. 4 HOURS. The growth of cities in the United States; legal problems of cities; intergovernmental relations; charters and charter drafting; powers and forms of government organization; politics and pressure-group activity; administrative organization; municipal functions and services; revenue problems. Prerequisite: PolS 100 or 120 or 150 or 151.

206. POLITICS OF URBAN GOVERNMENT. 4 HOURS. Political issues in the physical development of urban communities in the United States. Central concern is with the impacts, intended and unintended, of governmental policies, including effects of federal programs, role of local government in planning and zoning, effects of taxation and fiscal policy on growth, interrelationship of the private developer and the public sector, and relationship of physical development to social problems, particularly in the area of housing. Prerequisite: PolS 100 or 120 or 150 or 151.

212. STATE GOVERNMENT. 4 HOURS. Organization and powers of state governments in the United States; constitutions and problems of revision; legislatures and legislation; administrative problems; the state judiciary and judicial reform; intergovernmental relations; financing major services. Prerequisite: PolS 100 or 120 or 150 or 151.

216. STRATEGIES FOR CHANGE. 4 HOURS. Various forms of citizen activity and the conditions for their success in bringing about social, economic, and political change. Special emphasis on electoral strategies, issue strategies (antiwar, antipollution, and others), and administrative strategies. Prerequisite: 4 hours of political science, sociology, or contemporary history.

219. LITERATURE AND POLITICS. 4 HOURS. Same as English 219. For majors and nonmajors. The portrayal of political ideas and problems in literature. Prerequisite: 8 hours of English or junior standing or consent of the instructor.

220. POLITICAL BEHAVIOR. 4 HOURS. An introduction; analysis of voting behavior, political leadership. policy formation, and related matters. Prerequisite: PolS 100 or 120 or 150 or 151.

221. TOPICS IN NATIVE AMERICANS IN CONTEMPORARY SOCIETY. 4 HOURS. May be repeated for a maximum of 12 hours. Same as Native American Studies 221. Evolution of twentieth-century federal, state, local, and tribal Indian policies. Current political and social issues affecting Native Americans. Specific topics are announced each term. Prerequisite: NASt 152.

226. POLITICAL PARTIES. 4 HOURS. Historical development, organization, and functioning of state and national parties; committees, conventions, campaigns, and finances; party platforms and issues. Prerequisite: PolS 100 or 120 or 150 or 151.

227. THE MASS MEDIA AND POLITICS. 4 HOURS. Credit is not given for Political Science 227 if the student has credit in Sociology 220. The role of printed and electonic mass media in shaping political attitudes and behavior. The impact of mass media coverage on political decision-making at all governmental levels. Analysis of mass media structure and operation within various political contexts. Prerequisite: 4 hours of political science, sociology, or contemporary history.

230. COMPARATIVE ANALYSIS OF POLITICS. 4 HOURS. Principles of comparative political analysis and of the political systems of several countries outside of the United States. Prerequisite: PolS 200.

231. POLITICAL SYSTEMS OF CHINA. 4 HOURS. Same as Asian Studies 220. Analysis of techniques of political control, with special reference to the roles of ideology and organization; China's foreign policy, emphasis on both the Sino-Soviet conflict and the Sino-American confrontation. Prerequisite: 4 hours of political science, history, or sociology.

232. POLITICAL SYSTEMS OF JAPAN AND KOREA. 4 HOURS. Same as Asian Studies 221. Political systems of contemporary Japan, North Korea, and South Korea. Analysis of their respective political institutions, processes, behaviors, and foreign policies. Prerequisite: 4 hours of political science, history or sociology.

234. COMPARATIVE GOVERNMENT: GREAT BRITAIN. 4 HOURS. The government of Great Britain compared especially with that of the United States

and the USSR to illustrate and contrast the politics and governments of democracies and dictatorships. Prerequisite: 4 hours of political science, history, or sociology.

235. COMPARATIVE GOVERNMENT: THE SOVIET UNION. 4 HOURS. The nature, evolution, and problems of the political and economic systems of the USSR. Prerequisite: 4 hours of political science, history, or sociology.

236. COMPARATIVE GOVERNMENT: FRANCE AND GERMANY. 4 HOURS. Evolution of the political systems; analysis of reforms since 1945; operation of the governments and political parties. Prerequisite: 4 hours of political science, history, or sociology.

242. GOVERNMENT AND POLITICS OF LATIN AMERICA. 4 HOURS. Same as Latin American Studies 282. Comparative examination of the governments and politics of selected countries. Patterns of political leadership and followership, governmental processes, problems of development, and foreign political influence. Prerequisite: 4 hours of political science, history, or sociology.

243. POLITICAL DEVELOPMENT OF THE MIDDLE EAST. 4 HOURS. Same as Asian Studies 223. Analysis of contemporary politics, including the clash of traditional institutions with new social and political forces, such as Islam, nationalism, the military, political parties, and ideological trends. Prerequisite: 4 hours of political science, history, or sociology.

245. AFRICAN POLITICS SOUTH OF THE SAHARA. 4 HOURS. The information and analytical tools needed to interpret current sub-Saharan African politics. Politics in traditional African societies; politics under colonial rule; the struggle for independence; post-independence politcs. Prerequisite: 4 hours of political science, history, or sociology.

251. SYMPOSIUM ON POLITICS. 1 TO 4 HOURS. May be repeated for a maximum of 8 hours. Course content and format is varied to adapt to the changing political scene. Prerequisite: 2 courses in political science, history, or sociology.

252. THE JUDICIAL PROCESS. 4 HOURS. The judicial process viewed as part of the political process. State and federal court systems from the trial to the Supreme Court level. Demands made on courts from outside; organization of court systems; roles played by law enforcement officials, attorneys, and judges; methods by which courts reach decisions; effects of these decisions on actors outside the courts. Prerequisite: PolS 100 or 120 or 150 or 151 or consent of the instructor.

253. CONSTITUTIONAL LAW. 4 HOURS. Constitutional provisions and principles as they developed through Supreme Court interpretation; the amending process; federalism; commerce, taxing, and war powers; due process of law; the constitutional relations between the three major branches of government. Prerequisite: PolS 100 or 120 or 150 or 151 or consent of the instructor.

254. THE CONSTITUTION AND CIVIL LIBERTIES. 4 HOURS. The nature and constitutional positions of freedom of religion, speech, press, and others; varying interpretations of these freedoms; difficulties encountered in protecting them; problems of discrimination against racial, religious, and other minorities. Prerequisite: PolS 100 or 120 or 150 or 151 or consent of the instructor.

255. COURTS, COLOR, AND THE CONSTITUTION. 4 HOURS. The efforts of Black Americans to attain equality under federal constitutional standards. Focus on the executive, legislative, and judicial application of the Thirteenth, Fourteenth, and Fifteenth Amendments to racial discrimination in public edu-

cation, transportation, housing, recreation, public accommodations, and the right to vote. The emerging "new civil rights." Prerequisite: PolS 100 or 120 or 150 or 151 or consent of the instructor.

261. PUBLIC ADMINSTRATION. 4 HOURS. Introduction to the principal concepts, ideas, and issues; the evolution of administrative thought and practice in the United States; a conceptual scheme for analysis of bureaucratic structure and behavior; the human factor in administration; the politics of the budgetary process; the environmental constraints on bureaucratic organization. The contributions of behavioral sciences research are stressed. Prerequisite: PolS 100 or 120 or 150 or 151.

262. ORGANIZATIONAL BEHAVIOR. 4 HOURS. The nature and forms of politically relevant organizational behavior in modern society; particular emphasis on political environment of the organizations. Detailed analysis of one specific organization in its political-governmental setting. Prerequisite: PolS 100 or 120 or 150 or 151.

263. COMPARATIVE AND INTERNATIONAL ADMINISTRATION. 4 HOURS. Analysis of bureaucratic structure and behavior in selected countries; the problems and practices of the international civil service. Consideration of a conceptual framework for comparative administrative analysis. Prerequisite: PolS 261 or 286 or one course in comparative government.

264. SCIENCE, TECHNOLOGY, AND PUBLIC POLICY. 4 HOURS. The impact of science and technology on governmental policy in the United States. Responses of the national executive and legislative branches of govenment; intergovernmental aspects of technological advances. Prerequisite: PolS 100 or 150 or 151.

265. THE PUBLIC ADMINISTRATION OF SCIENCE AND TECHNOLOGY. 4 HOURS. The response of public systems to the scientific and technological revolution; the governmental institutions being devised to administer science and technology in the public sector. Emphasis on technological problems caused by the emergence of new metropolitan communities.

266. ENVIRONMENTAL POLITICS. 4 HOURS. An overview of policies of pollution control in the United States. Political problems relating to the environment and the attempts to resolve them on the federal, state, and local levels of government. Prerequisite: PolS 100 or 150 or 151.

270. FIELD EXPERIENCE IN POLITICAL SICENCE. 2 TO 12 HOURS. Students are placed in an organization on a part-time to full-time basis. Possible placement sites include, but are not limited to, governmental agencies, political party organizations, community groups, and various types of private organizations. Arrangements are made with the organization by the department and the student for both placement and an acceptable research project. The student's project culminates in a major paper evaluated by the supervising faculty member. Prerequisites: PolS 200, one additional research methods course, one course in public administration or organization theory, one course in urban politics, and consent of the instructor.

280. INTRODUCTION TO THE POLITICS OF DEVELOPING NATIONS. 4 HOURS. Same as Latin American Studies 280. Comparative study of the political, economic, and social characteristics of underdeveloped nations. Colonialism, nationalism, political ideologies, and problems of effective political organization and functions. Prerequisite: PolS 100 or 120 or 152 or two courses in social sciences.

281. UNITED STATES FOREIGN POLICY. 4 HOURS. Analysis of the internal and external factors that influence the formulation and execution of the foreign policy of the United States. Major problems of contemporary foreign policy; constitutional, organizational, administrative, and intellectural factors. Prerequisite: PolS 100 or 150 or 151.

285. COMPARATIVE FOREIGN POLICIES. 4 HOURS. Comparative study of foreign policies of major nations and blocs of nations. Major national interests, substance of foreign policies, and methods of policy formulation. Prerequisite: PolS 184. Political Science 230 is recommended.

286. INTERNATIONAL ORGANIZATION. 4 HOURS. The evolution of international organizations; structure and operation of various types of contemporary institutions. Special attention to the United Nations, its history, operations, and progress. Prerequisite: PolS 184.

287. INTERNATIONAL LAW. 4 HOURS. The theory and practice of international law; particular reference to its evolving role in the contemporary world. Analysis of decisions of international tribunals, past and present. The contributions of the United Nations to the progressive development of international law. Prerequisite: PolS 184 or consent of the instructor.

288. INTERNATIONAL RELATIONS OF THE MIDDLE EAST. 4 HOURS. Regional problems, such as the drive for Arab unity, the Arab-Israeli dispute, the role of the region in world politics, and the decline of Western influence in the area. Prerequisite: PolS 184 or one course in modern diplomatic history at the 200 level or higher.

290. THEORIES OF POLITICS: THEIR CONTRIBUTIONS AND LIMITS I. 4 HOURS. Examination and evaluation of some classical and contemporary theories of politics and the implications such theories have for an understanding of contemporary politics and political action. Particular emphasis on the possibility of scientific theories of politics and on the place of value judgments in theory construction. The theories of Thucydides, Plato, Aristotle, Augustine, David Easton, S.M. Lipset, and Hans Morgenthau. Prerequisite: PolS 100 or consent of the instructor.

291. THEORIES OF POLITICS: THEIR CONTRIBUTIONS AND LIMITS II. 4 HOURS. Continues Political Science 290. Additional emphasis on deductive theories; John Locke, and Rousseau. Aquinas, Machiavelli, Hobbes, Jacques Maritain, and Anthony Downs are also covered. Prerequisite: PolS 290 or consent of the instructor.

292. THEORIES OF POLITICS: THEIR CONTRIBUTIONS AND LIMITS III. 4 HOURS. Continues Political Science 291. Additional emphasis on interest group theories, elitism, and liberalism. James Harrington, David Truman, Edmund Burke, Karl Marx, C. Wright Mills, John Stuart Mill, and Christian Bay are covered. Prerequisite: PolS 290 or 291 or consent of the instuctor.

295. INTRODUCTION TO MARXISM. 4 HOURS. Examination of some of the basic works of Marx and Engels to determine the importance of Marxian analysis for contemporary politics. Prerequisite: PolS 100 or consent of the instructor.

296. THE DIALECT OF REVOLUTIONARY CHANGE. 4 HOURS. Notions of dialectic in Hegel and Marx as they relate to the nature of revolutionary change; revolutionary change as a special resolution of the contradictions of lordship and bondage; discussion of the notion of contradiction; the paradox of

revolutionary action. Prerequisite: PolS 100 or consent of the instructor. One introductory sociology course is recommended.

297. AMERICAN POLITICAL THOUGHT. 4 HOURS. Survey of the political thought of the colonial, revolutionary, constitution-making, and Civil War periods; recent criticisms and defense of popular government as applied in the United States. Prerequisite: PolS 100 or 150 or 151 or consent of the instructor.

299. HONORS COURSE. 2 TO 4 HOURS. May be repeated for up to three terms for a maximum of 10 hours. Open only to political science majors. Independent reading and research. Prerequisites: Senior standing, University grade point average of 4.25, political science grade point average of 4.50, and approval of the department.

305. LOCAL POLITICAL DECISION-MAKING. 4 HOURS. A research seminar. The problem of identifying and investigating political decisions in a major urban area like Chicago; an attempt is made to apply different theories of decision-making to local politics. Prerequisites: PolS 120 or 150 and consent of the instructor.

306. GHETTO POLITICS. 4 HOURS. Analysis of the political impact of the ghetto on local, state, and national political systems; the impotence of the ghetto voter; the ghetto politician; ghetto riots as political protest; the ghetto and presidential politics. Prerequisite: Three courses in political science, American history, or sociology or consent of the instuctor.

307. URBAN POLITICS SEMINAR. 4 HOURS. Analysis of the structure and dynamics of political parties and organizations in urban areas. Using Chicago and its suburbs as a laboratory, intensive study of the power structure, strength, and weakness of the Democratic and Republican parties in urban areas. Prerequisites: PolS 205 and consent of the instructor.

311. STUDIES IN URBAN PUBLIC POLICIES. 4 HOURS. The problems of governing metropolitan areas; special emphasis on evolving patterns of cooperation among governments in metropolitan areas, such as metropolitan federalism, city-county consolidation, councils of governments, and regional planning commissions. Prerequisite: PolS 120 or 205.

314. MATHEMATICAL MODELS OF POLITICS. 4 HOURS. Introduction to formal and deductive models of politics. Topics include assumptions of rationality, political participation, game theory, Arrow's general impossibility theorem and majority rule, externalities, models of regulation and public policy, and electoral competition. Prerequisite: PolS 200.

315. LEGISLATURES AND LEGISLATION. 4 HOURS. The legislative function in government; structure and organization of American national, state, and local legislatures; party organization in legislatures; legislative procedure; pressure groups and lobbying; relation of the legislature to other branches of government; problems of legislative reorganization. Prerequisite: PolS 120 or 150 or 151.

316. THE PRESIDENT AND CONGRESS. 4 HOURS. Analysis of the relationship of the President and Congress and of the problems involved in the formulation and execution of public policy. Prerequisite: PolS 120 or 150 or 151.

317. INTERGOVERNMENTAL RELATIONS. 4 HOURS. The origin and evolution of the American federal system; federal-state constitutional relationships; intergovernmental fiscal relations; the political cultures; interstate relations; re-

gionalism; state-local relations; interlocal relations and cooperative federalism in functional areas. Prerequisites: PolS 150 or 151 and 205 or 212.

320. STUDIES IN URBAN NATIVE AMERICANS. 4 HOURS. May be repeated for a maximum of 12 hours. Same as Native American Studies 320. Native American life in the city: involvement, problems, and responses; organizations; government structures and agencies. Specific topics are announced each term. Prerequisite: Junior standing or PolS 221.

327. PUBLIC OPINION AND POLITICAL COMMUNICATION. 4 HOURS. The nature of public opinion and political communication systems; patterns of opinion distribution and techniques for opinion measurement; forces shaping public opinion, with emphasis on the mass media; the impact of public opinion on public policy; comparison of political communication patterns in the United States with less developed and total totalitarian nations. Prerequisite: PolS 200 or consent of the instructor.

328. PROPAGANDA AND THE LANGUAGE OF POLITICS. 4 HOURS. The nature of propaganda, political symbols, and the language of politics; the uses of political symbols and propaganda in the political processes of democratic and totalitarian societies; international propaganda and psychological warfare; methods and uses of propaganda analysis. Prerequisite: PolS 200 or consent of the instructor.

331. ELECTORAL BEHAVIOR. 4 HOURS. Emphasis on two aspects of the study of electoral behavior: social, economic, and psychological theories developed specifically for, or adaptable to, the explanation of electoral behavior; introduction to inductive studies of voting behavior. Prerequisite: PolS 200. Political Science 220 is recommended.

332. QUANTITATIVE STUDY OF MULTINATIONAL POLITICS. 4 HOURS. The usefulness of statistical reasoning in making inferences about international politics. Political decision-making, political conflict and cooperation, and political development and change in terms of three basic levels of analysis: multinational organizations, nations, and international relations. Prerequisites: PolS 200 and 230 or consent of the instructor. Political Science 201 is recommended.

334. POLITICAL SOCIALIZATION. 4 HOURS. Introduction to the problems of how people learn about the polity, from whom they learn, under what circumstances, and with what consequences. Prerequisite: Three courses in political science, including at least one dealing with human political behavior, or consent of the instructor.

336. FILM AS A RESEARCH TECHNOLOGY IN THE SOCIAL SCIENCES. 4 HOURS. The techniques and problems of film as a technology for generating, interpreting, and presenting data.

337. THE POLITICS OF ALIENATION. 4 HOURS. Conceptual, empirical, and normative analysis of alienation from polity, society, culture, and self. Focus on the political consequences of various forms of alienation, including radicalism, apathy, protest, revolution, renewal, and innovation. Empirical research is required. Prerequisites: PolS 200, 220. Political Science 201 is recommended.

340. THE POLITICS OF URBAN EDUCATION. 4 HOURS. Same as Education 306 and Urban Planning and Policy 306. Relations between school governance and urban politics. Particular attention to the role of educational interest groups, the school board, professional educators, citizens, and civic leaders in the formulation and execution of educational policy. Prerequisite: Consent of the instructor.

341. POLITICAL CULTURE. 4 HOURS. Attitudes, values, beliefs, and behavioral norms that characterize the political systems in the United States and other countries. Special problems, such as the nature of national identity, indicators of political cohesion, or determinants of political stability and instability, may be emphasized. Prerequisites: PolS 200 and 230 or consent of the instructor.

353. SEMINAR: PROBLEMS OF CONSTITUTIONAL LAW. 4 HOURS. Supervised individual study of selected problems arising in the interpretation of the United States Constitution. Prerequisites: PolS 200, either 253 or 254, and consent of the instructor.

356. ADMINISTRATIVE LAW. 4 HOURS. Legal problems arising in the relationships between the citizen and the government official; administrative rulemaking and enforcement; judicial review of administrative actions. Prerequisite: Consent of the instructor.

361. POLITICAL LEADERSHIP. 4 HOURS. Contemporary political leadership and elites. Various approaches to, and theories about, political leadership in a variety of situational contexts, such as small groups, developing nations, revolutionary societies, complex political systems and organizations. Prerequisites: PolS 200 and 230 or consent of the instructor. Political Science 220 is recommended.

362. SEMINAR: PUBLIC ADMINISTRATION. 4 HOURS. Supervised individual study of selected problems. Prerequisite: PolS 261 or 263.

364. POLITICAL MODERNIZATION. 4 HOURS. The process of modernization in the United States and other countries; emphasis on the interaction between political and other factors, such as social change and economic growth; historical and contemporary political modernization and attendant problems. Prerequisites: PolS 200, 230.

381. SEMINAR: POLITICAL PROBLEMS OF DEVELOPING SOCIETIES. 4 HOURS. May be repeated to a maximum of 12 hours if the subject matter is different for each registration. Same as Latin American Studies 381. Selected aspects of the politics of the countries of Asia, Africa, and Latin America. Prerequisites: PolS 200 and 232 or consent of the instructor. Additional prerequisites may be stipulated depending on the subject matter of the seminar.

385. WOMEN AND POLITICS: PROBLEMS IN POLICY ANALYSIS AND POLITICAL THEORY. 4 HOURS. The political, social, and economic participation of women in American society. Theories on the use of power, socialization, and psychobiology as models in analyzing the outputs and outcomes of policies that affect women. Prerequisites: PolS 200 and one other 200- or 300-level political science course or consent of the instructor. Political Science 220 is recommended.

386. PROBLEMS IN INTERNATIONAL ORGANIZATION. 4 HOURS. May be repeated once for credit. Subject matter varies from term to term but centers on one group of related problems pertaining to the United Nations or other international organizations. Prerequisites: PolS 200 and two courses in international politics or international organizations. Political Science 184 and 286 are recommended.

388. SEMINAR: PROBLEMS IN AMERICAN FOREIGN RELATIONS. 4 HOURS. Supervised individual study of selected problems of contemporary United States foreign relations. Prerequisites: PolS 200 and either 184 or 281 or consent of the instructor. Political Science 202 is recommended.

390. SCOPE AND METHODS OF POLITICAL SCIENCE. 4 HOURS. The scope and subject matter of political science. Special attention to analytic processes in the development of concepts, hypotheses, and theories. Methodologies and modes of analysis now in use by political scientists. Prerequisites: PolS 100 or 120 or 151 and one 200-level course in political science.

391. POLITICAL POWER. 4 HOURS. The problem of the nature of political power. Introduction to some of the major literature of power and the development of the concept of political power as a descriptive category adequate to the comparative analysis of broader political phenomena, such as parties, official decision-making structures, and movements. Prerequisites: PolS 120 or 150 and 4 hours of upper-division political science courses or consent of the instructor.

392. DEMOCRATIC THEORY. 4 HOURS. Democracy as a procedure of government and the value commitments associated with this form of government. Special attention to corporate wealth, special interests, bureaucracy, and the mass media as they affect the existence of democratic government.

395. POLITICAL VIOLENCE. 4 HOURS. Seminar. Analysis of the use, or threat, of violence in the political process. Focus on domestic forms of violence and aggression in various nations viewed cross-culturally. Prerequisites: PolS 150 or 151, two 4-hour courses in the social sciences, and consent of the instructor.

398. THE PROBLEM OF JUSTICE. 4 HOURS. Same as Criminal Justice 398 and Religious Studies 398. The premodern view of justice, such as Plato's or Aristotle's; the modern understanding of justice, such as Hobbes's or Locke's, which is the foundation of the modern political regime; Rousseau's seminal political thought on justice, which is the basis for a variety of reforms and alternatives offered to Hobbes's and/or Locke's political regime. Prerequisite: Two courses in political science, including PolS 150 or 151.

399. SEMINAR ON POLITICAL THEORY. 4 HOURS. May be repeated for a total of 8 hours. In-depth analysis and discussion of selected problems or works in political theory. Prerequisites: PolS 200, 290, 291, and 292 or consent of the instructor.

Portuguese. See Spanish, Italian, and Portuguese.

Psychology

Professors: Leonard D. Eron, PhD, Chairman of the Department; Philip Ash, PhD; Gershon Berkson, PhD; Louis Berman, PhD; Rosalind Cartwright, PhD; John Davis, PhD; Roger Dominowski, PhD; I.E. Farber, PhD; Paul Greene, PhD (Emeritus); Herbert Grossman, MD; Harold Klehr, PhD; Benjamin Kleinmuntz, PhD; Eli Lipman, PhD; Susan Markle, PhD; Theodore Millon, PhD; Sheldon Rosenberg, PhD; Harry Upshaw, PhD.

Associate Professors: Alan Benton, PhD; Philip Freedman, PhD; Charles L. Gruder, PhD; Allen Howard, PhD; L. Rowell Huesmann, PhD; Ernest Kent, PhD; Vivian Lipman, PhD; Nan McGehee, PhD; Leon Miller, PhD; Rolf Peterson, PhD; Alexander Rosen, PhD; Gerald Senf, PhD; Herbert Stenson, PhD; Judith V. Torney, PhD.

Assistant Professors: Raymond Bennett, PhD; Nathan Clark, PhD; Shari Diamond, PhD; David Fay, PhD; Christopher Keys, PhD; Bruce Korth, PhD; Leonard Kroeker,

PhD; Michael Levine, PhD; Carol Peterson, PhD (Visiting); Steven Reiss, PhD; Maris Rodgon, PhD; R. Timothy Stein, PhD; Joseph Stokes, PhD (Visiting); Leonard Sushinsky, PhD.

Student Counseling Service

Associate Professors: James W. Creaser, PhD; Barry S. Greenwald, PhD.

Assistant Professors: Carmen J. Carsello, PhD; Julia M. Curry, MA; Thomas L. Henschen, PhD; Myron A. Whitman, PhD.

Instructors: Lorraine H. Goldberg, PhD; Lorraine A. Howard, MA; Mitchell Jacobs, MA; Margaret J. LaPlante, MA.

Counselors: Kathleen S. Brownewell, MA; Nancy G. Burton, PhD; Sandra D. Finkelstein, MA; Jo-Ann A. Goodyear, MA; Janet L. Ostrand, PhD; Bertha J. Spergel, MA; Camilla A. Tanner, MA.

Major—for the Bachelor of Arts, 36 hours, including:
Psychology 100, 101,[1] 143, and 240 or 243
At least three from Psychology 210, 220, 230, 250, 251, 252, 255, 256
At least 8 additional hours in psychology courses numbered above 200

Departmental Distinction: A candidate must complete a major that includes:
Psychology 100, 101,[1] 143, and 243
At least three from Psychology 210, 220, 230, 250, 251, 252, 255, and 256
At least two from Psychology 260, 261, 262, 265, 266
Mathematics 101 or 104, 110, and 194 or Mathematics 101 (or 104 and 105), 130, 131
One year of laboratory courses in biology, chemistry, and/or physics

A candidate for Departmental Distinction must earn a 4.00 (A=5.00) grade point average in psychology courses numbered 200 and above and must be eligible for graduation with College Honors.

Note: Students who expect to apply for graduate work in psychology are advised to complete the Departmental Distinction program.

Minor—24 hours, including:
Psychology 100, 101,[1] 143
Three from Psychology 210, 220, 230, 250, 251, 252, 255, and 256

Courses (Psch)

100. INTRODUCTION TO PSYCHOLOGY I. 4 HOURS. Survey of the basic concepts of contemporary psychology in those areas of the field that emphasize man as a biological organism. Participation in actual research.

101. INTRODUCTION TO PSYCHOLOGY II.* 4 HOURS. Survey of the basic concepts of contemporary psychology in those areas of the field that emphasize complex cognitive and social processes. Participation in actual research.

1. Credit toward a major or a minor for Psychology 101 is not given to students who took Psychology 100 in residence prior to September 1970 or who have received transfer credit for an introductory course in psychology completed at another collegiate institution. These students must take an additional 4 hours of psychology to complete a major or a minor.

104. THE PROFESSION OF PSYCHOLOGY. 4 HOURS. Introduction to psychology as a profession in modern society; clinical practice, applications of psychology in work environments, and the influence of psychology on public policy. Prerequisites: Psch 100, 101.*

143. INTRODUCTION TO RESEARCH IN PSYCHOLOGY. 4 HOURS. Techniques and problems associated with the study of behavior. Emphasis on measurement, descriptive statistics, and the principles of experimental design. Exercises involving data collection. Prerequisites: Psch 100, 101.*

150. DEVELOPMENTAL PSYCHOLOGY. 4 HOURS. For students not majoring in psychology. General introduction to cognitive, social, and personality development from birth through early adulthood. Prerequisites: Psch 100, 101.*

* Psychology 101 is not required, is noncredit, and is not prerequisite to Psychology 104, 143, and 150 for students who have credit in Psychology 100 at UICC prior to fall quarter 1970 or for students offering accepted transfer credit for an introductory course in psychology from another collegiate institution. An additional 4 hours substituting for Psychology 101 is needed to fulfill the minimum hours required for psychology majors, minors, and general education social sciences programs if taken in psychology.

210. PSYCHOLOGY OF PERSONALITY. 4 HOURS. Systematic study of the development, dynamics, and structure of personality; methodology, theory, and empirical research. Prerequisite: Psch 143.

215. PSYCHOLOGY OF ATTITUDE AND OPINION. 5 HOURS. Individual readings and projects are assigned. Same as Speech and Theater 215. Survey of behavioral approaches to the measurement of social attitudes and opinions; determinants and correlates of public attitudes and opinions. Lecture and participation in field and laboratory studies. Prerequisite: 8 hours of psychology or consent of the instructor.

220. PSYCHOLOGY OF CHILDHOOD AND ADOLESCENCE. 4 HOURS. Development of behavior in infancy, childhood, and youth. Emphasis on learning, motivational, and biosocial factors. Prerequisite: Psch 143.

224. EDUCATIONAL PSYCHOLOGY. 4 HOURS. Basic course in the psychology of education. Facts and principles of physical growth and development, learning, concept formulation, acquired motivation, and achievement testing applied to the classroom situation. Prerequisite: Psch 143.

230. PSYCHOLOGY IN BUSINESS AND INDUSTRY. 4 HOURS. Application of the methods and findings of psychology to the study of people at work. Emphasis on problems of personnel selection, training, work methods, safety, motivation, labor-management relations, counseling, and related topics. Prerequisite: Psch 143.

231. PSYCHOLOGY IN COMMUNITY SETTINGS. 4 HOURS. Psychological principles and research; their implications for understanding and acting in community settings. Student participation in role playing, observations, and discussion supplements lectures. Prerequisites: Psch 143 and a grade point average of 3.25 in psychology.

240. INTRODUCTION TO PSYCHOLOGICAL TESTING. 4 HOURS. The principles of psychological testing, with a survey of representative techniques. Emphasis on concepts of objectivity, reliability, and validity. Lectures and conference sections. Prerequisite: Psch 143.

243. STATISTICAL METHODS IN BEHAVORIAL SCIENCE. 4 HOURS. Credit is not given for Psychology 243 if the student has credit in Quantitative Methods 271. Introduction to statistical inference; probability distributions, sampling, hypothesis testing, and analysis of variance and nonparametric techniques. Emphasis on analysis of data from psychological research. Lectures and laboratory. Prerequisites: Psch 143 and consent of the instructor.

250. LECTURES IN PERCEPTION. 4 HOURS. Survey of theories and empirical findings in the study of sensation and perception. Emphasis on the contribution of experimental psychology to understanding the subjective experience of the physical environment. Prerequisite: Psch 143.

251. LECTURES IN LEARNING. 4 HOURS. Principles of learning; emphasis on parameters of acquisition, extinction, and retention in basic learning paradigms. Prerequisite: Psch 143.

252. LECTURES IN THE PSYCHOLOGY OF THINKING. 4 HOURS. Critical survey of experimental findings in verbal learning, problem-solving, psycholinguistics, and conceptual behavior. Prerequisite: Psch 143.

255. LECTURES IN SOCIAL PSYCHOLOGY. 4 HOURS. Credit is not given for Psychology 255 if the student has credit in either Sociology 110 or 210. Survey of research and theory in representative areas of social psychology, including conformity, attitude development and change, social perception, conflict resolution, and group decision-making. Emphasis on experimental investigation of behavior in social settings. Prerequisite: Psch 143.

256. LECTURES IN PHYSIOLOGICAL PSYCHOLOGY. 4 HOURS. Research and theory concerned with the physiological bases of behavior. Understanding of basic brain organization and function is stressed; special emphasis on neural mechanisms of attention, emotion, motivation, and learning. Prerequisite: Psch 143.

260. LABORATORY IN PERCEPTION. 4 HOURS. Laboratory practicum in sensation and perception. Prerequisites: Psch 243, 250, and consent of the instructor.

261. LABORATORY IN LEARNING. 4 HOURS. Laboratory practicum in conditioning and simple learning; emphasis on the effects of motivational level and reinforcement contingencies. Prerequisites: Psch 243, 251, and consent of the instructor.

262. LABORATORY IN THE PSYCHOLOGY OF THINKING. 4 HOURS. Laboratory practicum in verbal learning, psycholinguistics, problem-solving, and conceptual behavior. Prerequisites: Psch 243, 252, and consent of the instructor.

265. LABORATORY IN SOCIAL PSYCHOLOGY. 4 HOURS. Laboratory practicum in social learning and perception, power and influence, and other aspects of social behavior. Prerequisites: Psch 243, 255, and consent of the instructor.

266. LABORATORY IN PHYSIOLOGICAL PSYCHOLOGY. 4 HOURS. Laboratory practicum; emphasis on research techniques of physiological psychology and the physiological correlation of behavior. Prerequisites: Psch 243, 256, and consent of the instructor.

268. LABORATORY IN DEVELOPMENTAL PSYCHOLOGY. 4 HOURS. Survey of dominant research strategies used in contemporary developmental psychology; laboratory experience in developmental research. Occasional field work off campus. Prerequisites: Psch 220 or 221; Psch 243.

280. ABNORMAL PSYCHOLOGY. 4 HOURS. Forms and determination of behavior and personality disorders. Prerequisite: Psch 210.

283. APPROACHES TO GROUP CONSULTATION. 4 HOURS. Application of psychological theory and principles to the analysis of group function and change. Survey of techniques and structured exercises emphasizing the development of skills in group participation and consultation. Evaluation of student performance in the course is based on the usual academic criteria and on in-class performance in group settings. Prerequisites: Psch 231, 240, a grade point average of 3.25 in psychology, and consent of the instructor.

284. BEHAVIOR CHANGE AND ITS EVALUATION. 4 HOURS. Concepts and techniques for behavior change in applied settings; emphasis on application of learning principles and appropriate models for assessment of change. Prerequisites: Psch 231, 240, a grade point average of 3.25 in psychology, and consent of the instructor.

285. FIELD WORK IN APPLIED PSYCHOLOGY. 4 HOURS. May be repeated for a total of 8 hours. Supervised practicum as a paraprofessional worker for a minimum equivalent of one day per week in a mental health center, survey research organization, sheltered workshop, community college student personnel office, or similar facility. Prerequisites: 28 hours of psychology, including Psch 230 or 231; any one of Psch 283, 284, 286; and approval of the field work organization.

286. APPROACHES TO INTERVIEWING. 4 HOURS. Application of principles of interviewing and of dyadic and group interaction in mental health, counseling, student personnel, business, and industry. Emphasis on understanding the dynamics of interviewing and developing interviewing skills. Prerequisites: Psch 230 or 231, Psch 240, a grade point average of 3.25 in psychology, and consent of the instructor.

291. TUTORIAL IN PSYCHOLOGY. 2 TO 4 HOURS. May be repeated for a total of 8 hours. Seminar on a preannounced topic suggested by students or faculty members. Suggestions for topics should be submitted in writing to the department office. Prerequisites: Psch 143 and consent of the instructor.

293. LABORATORY IN SELECTED TOPICS. 4 HOURS. May be repeated for a maximum of 8 hours. Practicum in laboratory techniques and research methods in selected fields of psychology. A specific topic is announced each term. Prerequisites: Psch 243, one 200-level course in the appropriate substantive area, and consent of the instructor.

299. INDEPENDENT RESEARCH. 2 TO 6 HOURS. May be repeated for a maximum of 18 hours. Individual research on a special problem under the direction of a staff member. Prerequisites: Psch 243, 4.00 grade point average, and consent of the instructor and the chairman of the department.

312. PERSON PERCEPTION. 4 HOURS. Analysis of theory and research on the perception and evaluation of persons in social settings, with emphasis on role theory, attribution, and social comparison processes. Applications to dynamics of interpersonal attraction, affiliation, and influence in experimental and natural settings. Prerequisites: Psch 265 and consent of the instructor.

313. SOCIAL JUDGMENT. 4 HOURS. Analysis of the judgment process and its implications for social psychological phenomena. Prerequisites: Psch 265 and consent of the instructor.

314. ATTITUDE CHANGE. 4 HOURS. Critical analysis of selected contemporary theory and research. Topics include source and message effects and determinants of persistence of change and resistance to change. Prerequisites: Psch 265 and consent of the instructor.

315. COGNITIVE CONSISTENCY PROCESSES. 4 HOURS. Critical analysis of research and theory related to the processes of information integration and its implications for attitude and opinion change. Emphasis on cognitive consistency formulations and their derivatives. Prerequisites: Psch 265 and consent of the instructor.

316. ANIMAL BEHAVIOR. 4 HOURS. Principles and methods in the study of animal behavior; review of the social behavior of representative species in various phyla. Prerequisites: BioS 100, 101, 102, and Psch 143 or consent of the instructor.

322. ADVANCED DEVELOPMENTAL PSYCHOLOGY AND EDUCATIONAL PROCESSES. 4 HOURS. Same as Education 322. Normal growth stages in language, physical growth, cognitive development, and social behavior from birth through adolescence; their relationship to major theories and to educational planning and practice. Prerequisites: Psch 101 and any one of Ed 210, Psch 220, or Psch 224.

323. PSYCHOLOGY OF THE EXCEPTIONAL CHILD. 4 HOURS. Methods, results, and interpretations of studies of physically, intellectually, and emotionally deviant children; special reference to their implications for education and behavior modification. Prerequisites: 12 hours of psychology, including Psch 220 or the equivalent, and consent of the instructor.

324. MENTAL DEFICIENCY. 4 HOURS. Review of concepts, research, and methods of the scientific study of mental deficiency. Prerequisites: Psch 243 and 323 or consent of the instructor.

329. THE THEORY OF JEAN PIAGET. 4 HOURS. Same as Education 329, Jean Piaget's genetic theory of the development of knowledge. His studies of cognitive development in children, especially his views on memory, learning, and intelligence. Educational implications. Prerequisites: Psch 101 and either Ed 210 or Psch 220.

330. ORGANIZATIONAL PSYCHOLOGY. 4 HOURS. Same as Management 330. Individual psychological and group processes and their interaction with organizational structure. Behavioral factors in effective organizational change. Prerequisites: Psch 243, one course in social psychology or industrial psychology, and consent of the instructor.

332. PERSONNEL PSYCHOLOGY. 4 HOURS. Systematic study of the development and utilization of psychological techniques of personnel selection, classification, and assessment. Prerequisites: Psch 240, 243, and consent of the instructor.

333. MOTIVATION AND MORALE IN ORGANIZATIONS. 4 HOURS. Same as Management 333. Concepts and methods in the assessment and modification of motivation, attitudes, and morale. Prerequisites: 12 hours of psychology, including Psch 330, and consent of the instructor.

335. PSYCHOLOGY OF INDUSTRIAL TRAINING. 4 HOURS. Same as Management 335. Psychological measurement techniques in assessing training needs

and evaluating training effectivness. Application of psychological techniques to the development of industrial training programs. Prerequisite: Psch 332 or the equivalent.

338. PSYCHOLOGY OF INDUSTRIAL CONFLICT. 4 HOURS. Same as Management 338. Behavioral analysis of the causes, dimensions, and modes of resolution of industrial conflict; special emphasis on labor-management relations. Prerequisite: Psch 330 or the equivalent.

343. ADVANCED STATISTICS I. 4 HOURS. Elementary probability theory, empirical and theoretical distributions, points and interval estimation, hypothesis testing. Prerequisites: Psch 243 and consent of the instructor.

345. PSYCHOMETRIC APPLICATIONS. 4 HOURS. Theory of psychological tests and measurement applied to problems of ability and personality testing; opinion sampling; reliability and validity; prediction and selection processes. Prerequisites: Psch 243 and consent of the instructor.

350. LEARNING AND CONDITIONING. 4 HOURS. Methods, results, and interpretation of experimental studies of basic learning processes in animal and human subjects. Prerequisites: Psch 261 and consent of the instructor.

351. PROGRAMMED LEARNING. 4 HOURS. Theory and research in the techniques, applications, and results of programmed instruction. Prerequisites: Psch 224 and consent of the instructor.

352. MOTIVATION. 4 HOURS. Methods, results, and interpretation of experimental studies of basic motivational processes in animal and human subjects. Prerequisites: Psch 261 or 266 and consent of the instructor.

353. OPERANT CONDITIONING. 4 HOURS. Survey of basic principles and current research in the area of operant behavior. Prerequisite: Consent of the instructor.

354. THE PSYCHOLOGY OF LANGUAGE. 4 HOURS. Same as Linguistics 374 and Speech and Theater 384. Introductory survey of methods, theory, and research; the history and present status of psychology's interest in language behavior. Prerequisite: Consent of the instructor.

355. HIGHER PROCESSES. 4 HOURS. Methods, results, and interpretations of experimental studies of language behavior, problem-solving, concept formation, and creativity. Prerequisite: Consent of the instructor.

356. SENSORY AND PERCEPTUAL PROCESSES I. 4 HOURS. Methods, results, and interpretation of experimental studies dealing with the determination of psycho-physical functions. Primary emphasis on the perception of single discrete stimuli and attributes of stimuli. Prerequisites: Psch 250 and consent of the instructor.

357. SENSORY AND PERCEPTUAL PROCESSES II. 4 HOURS. Methods, results, and interpretation of experimental studies dealing primarily with the role of contextual and experimental factors in perception. Prerequisites: Psch 250 and consent of the instructor.

359. BASIC BRAIN FUNCTION. 4 HOURS. Introduction; emphasis on the physiological basis of behavior. Physiology, anatomy, and pharmacology of the central nervous system. Physiological basis of behavioral constructs; brain function in abnormal behavior. Prerequisite: Psch 256.

360. HUMAN FACTORS. 4 HOURS. Application of experimentally derived principles of behavior to the design of equipment for efficient use and operation. Sensory and perceptual processes, motor skills, and experimental methodology. Prerequisite: 12 hours of psychology, including Psch 250 and 251 or the equivalents, or consent of the instructor.

361. INSTRUMENTATION IN PSYCHOLOGY. 4 HOURS. Use of transducers, programming equipment, and recording systems in psychological research. Prerequisite: Consent of the instructor.

362. PHYSIOLOGICAL PSYCHOLOGY. 4 HOURS. Methods, results, and interpretation of experimental studies of physiological and neurochemical correlates of learning, motivation, and perception. Laboratory demonstrations and problems. Prerequisites: 12 hours of psychology, including Psch 359 or the equivalent, and consent of the instructor.

363. BEHAVIORAL PHARMACOLOGY. 4 HOURS. Methods, results, and interpretation of experimental studies dealing with drugs and behavior. The role of drugs as tools in behavioral research and the use of experimental psychology techniques to explicate drug action. Prerequisites: Psch 359 and consent of the instructor.

370. SYSTEMS AND THEORIES. 4 HOURS. Critical introductory analysis of major historical systems and their representation in current theoretical issues. Prerequisites: Psch 250, 251, and consent of the instructor.

382. INTRODUCTION TO CLINICAL PSYCHOLOGY. 4 HOURS. The major areas, including assessment, treatment, and consultation, are considered in terms of current theory, practice, and research. Practicum work in a clinical endeavor, such as intellectual appraisal of children or organizational diagnosis of an elementary school, supplements classroom activity. Prerequisites: Psch 243 or 240 and consent of the instructor.

387. CAREER AND EDUCATIONAL COUNSELING IN THE COMMUNITY COLLEGE. 4 HOURS. Same as Education 387. Introduction to sources of information on careers and educational programs; basic techniques of student personnel contact appropriate to community college students; principles of career choice and guidance for students anticipating direct job entry or transfer to other institutions. Prerequisites: Psch 240 or Ed 250; Ed 321 or Psch 283 or 286 or the equivalents; and consent of the instructor.

399. PROBLEMS IN PSYCHOLOGY. 2 TO 12 HOURS. May be repeated for a total of 12 hours. Investigation of special problems under the direction of a staff member. Prerequisite: Consent of the instructor and the chairman of the department.

Religious Studies

Committee: James E. Landing, PhD, Chairman; Preston M. Browning, PhD; Robert M. Buren, PhD; J. Paul Carrico, MA; Robert E. Corley, PhD; Elizabeth R. Gebhard, PhD; George N. Hoffman, MA; Carol LaBranche, PhD; James L. Phillips, PhD.

Minor —32 hours, including at least 16 hours at the 200 or 300 level, distributed as follows:

Religious Studies 224, 278	8 hours
One from Religious Studies 103, 121, 214	4
One from Religious Studies 161, 225, 275	4
One from Religious Studies 273, 274	4

12 additional hours in Religious Studies selected in consultation with a member of the Religious Studies Committee.

No more than 6 quarter hours of any combination of Religious Studies 291, 295, and/or 299 may be counted toward completion of the minor.

Courses (RelS)

103. INTRODUCTION TO ETHICS. 4 HOURS. Same as Philosophy 103. Designed to challenge students to clarify beliefs. In some cases the student compares personal beliefs with those of Aristotle, Kant, Mill, Nietzache, or other classical authors. In other cases, such recurring problems as the relation between morality and self-interest, morality and the legitimate function of the state, or morality and custom are discussed.

120. MUSLIM PHILOSOPHY. 4 HOURS. Same as Philosophy 120. Survey of the development of philosophy in Islam.

121. COMPARATIVE RELIGIOUS PHILOSOPHIES. 4 HOURS. Same as Philosophy 121. Philosophical methodology is used in the study of some of the major world religions, both East and West.

122. PHILOSOPHY OF CONSCIOUSNESS. 4 HOURS. Same as Philosophy 122. The nature of human consciousness; emphasis on mysticism.

123. ISLAMIC MYSTICISM. 4 HOURS. Same as Philosophy 123. Basic concepts and doctrines of Muslim mystics, their conception of self-purification, knowledge, love, and vision of God.

161. INTRODUCTION TO BLACK RELIGION. 4 HOURS. Same as Black Studies 161. Introduction to the literature of the Black church and exposure to the living actuality in Chicago. Lecture topics include African influences, the nature of symbols, music, preaching, and the future of the Black church.

163. THE PREACHING OF THE BLACK CHURCH. 4 HOURS. Same as Black Studies 163. The central role of the preacher in the life of the Black church. Particular attention to the importance of mythology and symbol, Martin Luther King, Jr., recorded examples, and understanding the context of Black preaching.

164. THE MUSIC OF THE BLACK CHURCH. 4 HOURS. Same as Black Studies 164. The important role of music in the Black church experience. Particular attention to the spirituals and the gospel music of the urban religious experience; relationship to the phenomenon of tragedy.

167. RELIGIOUS THEMES OF FRENCH WRITERS I. 4 HOURS. Same as French 167 and Humanities 167. Evolution of the religious outlook of French writers from the theocentric to a humanistic perspective from the Middle Ages to 1700. Instruction and readings in English. Prerequisite: Consent of the instructor.

168. RELIGIOUS THEMES OF FRENCH WRITERS II. 4 HOURS. Same as French 168 and Humanities 168. The triumph of humanistic faith and its collapse (1700 to 1850). Instruction and readings in English. Prerequisite: Consent of the instructor.

169. RELIGIOUS THEMES OF FRENCH WRITERS III. 4 HOURS. Same as French 169 and Humanities 169. From 1850 to the present: the loss of faith in science; Catholic revival; existentialism; the absurd. Instruction and readings in English. Prerequisite: Consent of the instructor.

214. PHILOSOPHY OF RELIGION. 4 HOURS. Same as Philosophy 214. Philosophical inquiry into the grounds of religious belief, the character of religious experience, and the justification for the existence of God. Prerequisite: One course in philosophy.

222. INTRODUCTION TO RUSSIAN LITERATURE II. 4 HOURS. Same as Humanities 232 and Russian 222. Prose fiction from 1830 to 1880. Prose and poetry from 1880, to 1905. Special attention to the works of Pushkin, Lermontov, Gogol, Turgenev, Dostoevsky, and Tolstoy and to the "esthetic revival" after 1890. Prerequisite: Junior standing or consent of the instructor.

224. RELIGIOUS ART AND ARCHITECTURE. 4 HOURS. Same as History of Art and Architecture 224. Survey of the relationship between the visual arts and Christianity, Judaism, Islam, Hinduism, and Buddhism.

225. NON-WESTERN RELIGIONS. 4 HOURS. Same as Anthropology 225. The varieties of religious experience, including magic and witchcraft; the roles of priesthood, prayers, scriptures, and ceremonials in social integration; the nature of sectarian movements. Prerequisite: 4 hours of either anthropology, psychology, or sociology or consent of the instructor.

226. JEWISH SECTS AND SECTARIANISM. 3 HOURS. Same as Judaic Studies 282. The sociopolitical factors and their impact on the Jewish religion during the Second Commonwealth; the Samaritans; ethnic origin, history, and literature; the military colony at Elephantine; the Pharisees, Sadducees, Essenes, Zealots, Apocalyptists, and Qumranites, their political and religious views; Judaism and early Christianity.

231. EARLY CHRISTIAN AND BYZANTINE ART. 4 HOURS. Same as History of Architecture and Art 221. The art and architecture of the Latin West and the Greek East from the Age of Constantine through the First Golden Age of Byzantine art under Justinian. Prerequisite: HAA 115 or 142 or consent of the instructor.

232. EARLY MEDIEVAL ART. 4 HOURS. Same as History of Architecture and Art 222. The art and architecture of Western Europe from the Dark Ages through the early Romanesque; special attention to the Carolingian and Ottonian revivals of antiquity. Prerequisite: HAA 115 or 142 or consent of the instructor.

233. MEDIEVAL ART: 1100 TO 1400. 4 HOURS. Same as History of Architecture and Art 223. Art and architecture of the mature Romanesque through the High Gothic age. Prerequisite: HAA 115 or 142 or consent of the instructor.

235. STUDIES IN EXISTENTIALIST LITERATURE. 4 HOURS. Same as Humanities 235 and Philosophy 235. Imaginative works by Dostoevsky, Rilke, Kafka, Sartre, and Camus; selections from Pascal, Kierkegaard, Nietzsche, Jaspers, and Tillich. Prerequisite: Junior standing or consent of the instructor.

236. METAPHYSICS. 4 HOURS. Same as Philosophy 236. Basic issues concerning human freedom, causation, human action, the relation between mind and body, substance and attribute, universals and particulars, and the existence of God. Emphasis varies from term to term. Credit in Philosophy 101 is recommended.

238. MEDIEVAL ARCHITECTURE. 4 HOURS. Same as History of Architecture and Art 232. The development of early Christian, Byzantine, Romanesque, and Gothic architecture. Prerequisite: HAA 115 or 142 or consent of the instructor.

246. THE SOCIOLOGY OF RELIGION. 4 HOURS. Same as Sociology 246. Analysis of the structures and functions of religious institutions, particularly in modern society. Special attention to the interplay between religion and other social phenomena, such as economics and politics; the social-psychological aspects of religious behavior; current trends in religious institutions. Prerequisite: Soc 100.

248. MYTHOLOGY OF GREECE. 4 HOURS. Same as Classics 248 and Humanities 248. Intensive study of the gods and heroic sagas of the Greeks through original sources in translation.

253. THE INTELLECTUAL DEVELOPMENT OF GREECE. 4 HOURS. Same as Classics 253 and Humanities 253. Knowledge of Greek is not required. Selections from the philosophers, poets, historians, and scientists. Prerequisite: Junior or senior standing.

260. THE PROBLEM OF EVIL AND THE BLACK CHURCH. 4 HOURS. Same as Black Studies 260. The classic problem of evil in light of the distinctive experience of the Black religious traditions. Classic treatments reviewed include Albert Camus and Paul Ricoeur. Black writers examined are William Jones and Joseph Washington. Prerequisite: RelS 161 or 163 or consent of the instructor.

272. GREEK RELIGION. 4 HOURS. Same as Classics 272. Greek religious practice and thought from Mycenean to Hellenistic times. Prerequisite: Junior standing or consent to the instructor.

273. THE BIBLE AS LITERATURE I: THE OLD TESTAMENT. 4 HOURS. Same as Humanities 273. Historical and analytical study of the Old Testament portion of the English Bible; concentration on the King James Version, with attention to more recent revisions of that version. Prerequisite: Junior standing or consent of the instructor.

274. THE BIBLE AS LITERATURE II: THE APOCRYPHA AND THE NEW TESTAMENT. 4 HOURS. Same as Humanities 274. Historical and analytical study of the Apocrypha and New Testament portions of the English Bible; concentration on the King James Version, with attention to more recent revisions of that version. Prerequisite: Junior standing or consent of the instructor.

275. PHILOSOPHY AND RELIGION OF NATIVE AMERICANS. 4 HOURS. Same as Native American Studies 275 and Philosophy 275. Survey of American Indian beliefs about nature and the spirit world and the rituals connected with these beliefs, including changes that resulted from European contact.

276. JEWISH CULTURE AND RELIGIOUS HISTORY IN THE OLD AND NEW WORLDS. 3 HOURS. May be repeated for a total of 9 hours of credit. Same as Judaic Studies 276. Origin, evolution, and growth of the religious alignments in Judaism; the medieval Jewish community; the ghetto; the Enlightenment; emancipation and its aftermath.

282. ROMAN RELIGION. 4 HOURS. Same as Classics 282 and Humanities 282. Beliefs, practices, and institutions of Roman religion and cults from the early republic to AD 476. Prerequisite: Junior standing or consent of the instructor.

291. HONORS SEMINAR ON RELIGIOUS STUDIES. 4 HOURS. Variable content depending upon the instructor. A sincere interest in religious studies is requisite. Prerequisite: James Scholar or other honors designation approved by University Honors Programs.

295. STUDENT-INITIATED COURSE IN RELIGIOUS STUDIES. 1 TO 5 HOURS. For students who assume the initiative of requesting instruction in some aspect of religious studies not offered in any other course. Approval of the chairperson of the Committee on Religious Studies is required.

297. INTRODUCTION TO JEWISH ETHICS. 3 HOURS. Same as Judaic Studies 297. Relations among individuals; such issues as I and Thou, apathy and empathy, choosing a sex ethic.

299. SPECIAL TOPICS IN FELIGIOUS STUDIES. 1 TO 5 HOURS. May be repeated up to a maximum of 8 hours. Independent reading, study, or research for students who are interested in religious topics. Prerequisites: Upper-division standing and consent of the chairperson of the Committee on Religious Studies.

300. MYTHOLOGY IN ROME. 4 HOURS. Same as Classics 348. The conscious assimilation and adaptation of Greek mythology in Rome; investigation of the concept of mythology. Prerequisite: RelS 248.

304. SEVENTEENTH-CENTURY RATIONALISM. 4 HOURS. May be repeated once for credit with the approval of the department. Same as Philosophy 304. Careful readings of one or more of the rationalist philosophers, such as Descartes, Spinoza, and Leibniz. Prerequisite: Two courses in philosophy or junior standing.

312. GEOGRAPHY OF RELIGIONS. 4 HOURS. Same as Geography 312. Systematic treatment of geographical manifestations of the major religious systems of the world. Special attention to the geographical origins and dispersal mechanisms of religious systems and to the manner in which man organizes his life within the framework of his belief. Intensive study of applications being made in the geographical inquiry of religious systems. Prerequisite: Geog 100, 210.

315. COMPARATIVE RELIGIOUS MOVEMENTS. 4 HOURS. Same as Anthropology 315. Analysis of religious behavior; special reference to the emergence of messianic cults in Africa and Melanesia and among the North American Indians and New World Negroes. Prerequisites: Junior standing, 8 hours of either social anthropology or sociology, and consent of the instructor.

332. TOPICS IN ETHICS AND VALUE THEORY. 4 HOURS. Same as Philosophy 332. Intensive treatment of one or more topics, such as the analysis of moral judgments, the classification of ethical theories according to their formal properties, the thesis of ethical relativism, and the comparison between ethical and scientific theories. Prerequisite: Phil 218 or two courses in philosophy, one of which must be a 200-level course.

348. ST. AUGUSTINE: *THE CONFESSIONS*. 4 HOURS. Same as Latin 348. The autobiographical portions of *The Confessions*. Prerequisite: One 200-level course in Latin.

350. MILTON. 4 HOURS. Same as English 315. Survey of Milton's poetry and prose, with emphasis on his major works. Prerequisite: Senior standing or 12 hours of English or consent of the instructor.

365. ARISTOTLE: *NICOMACHEAN ETHICS.* 4 HOURS. Same as Greek 365. Reading and analysis of selections from several books. Sources and problems of Aristotle's ethical writings. Prerequisite: 8 hours of classical Greek at the 200 level or the equivalent.

371. STUDIES IN THE ORAL TRADITION OF NATIVE AMERICANS. 4 HOURS. Same as English 371, Native American Studies 371, and Philosophy 371. Content, cultural context, and functions of oral traditions. Styles and performances. Specific topics are announced each term. Prerequisite: Junior standing or RelS 275.

395. TOPICS IN RELIGIOUS HISTORY. 4 HOURS. May be repeated for credit. Same as History 395. Specific topics are announced each term. Prerequisite: 4 hours of history or consent of the instructor.

398. THE PROBLEM OF JUSTICE. 4 HOURS. Same as Criminal Justice 398 and Political Science 398. The premodern view of justice, Plato's or Aristotle's; the modern understanding of justice, such as Hobbes's or Locke's, which is the foundation of the modern political regime; Rousseau's seminal political thought on justice, which is the basis for a variety of reforms and alternatives offered to Hobbes's and/or Locke's political regime. Prerequisite: Two courses in political science, including PolS 150 or 151.

Rhetoric. See English.

Rhetoric for Foreign Students. See English.

Russian. See Slavic Languages and Literatures.

Slavic Languages and Literatures

Professors: Nicholas Moravcevich, PhD, Head of the Department; Elizabeth Pribic, PhD; Tymon Terlecki, PhD (Visiting).

Associate Professors: Tymoteusz Karpowicz, PhD (Visiting); Jaroslav Schejbal, PhD; Biljana Sljivic-Simsic, PhD.

Assistant Professors: George Gutsche, PhD; Wilma Hoffmann, MA; Malgorzata Pruska-Munk, PhD; Bohdan Rubchak, MA.

Instructors: Jean L. Hellie, MA; Wanda L. Sorgente, MA; Nicholas Stroud, MA.

Lecturers: Irene Zaluski, MA.

Russian

Major—for the Bachelor of Arts, 48 hours beyond Russian 122, including Russian 201, 202, 203, 221, 222, and 223; Slavic 224; Russian 301, either 302 or 303, and 23 hours of upper-division courses in Russian of which at least 8 hours must be at the 300 level.

Minor—

1. Those who do not satisfy the college language requirements in Russian take a total of 32 hours, including Russian 101 through 122 and 8 hours at the 200

and 300 levels, chosen with the approval of the Department of Slavic Languages and Literatures.
2. Those who have competence at the level of Russian 104 or beyond take 20 hours at the 200 and 300 levels, chosen with the approval of the Department of Slavic Languages and Literatures.

Teacher Education in Russian: Requirements for Teaching in Secondary Schools

Major—for the Bachelor of Arts, 52 hours beyond the 100 level, including:
Russian 201, 202, 203, 204, 207, 221, 222, and 223; Slavic 224; Russian 301, either 302 or 303, and 332.
One elective from: Russian 215, 216, 230, History 235, 236, 237, or any 4-hour Russian literature course at the 300 level.

Minor—32 hours, including:
Russian 121, 122, 201, 202, 203, 204, 207, and either 230 or 332.

Polish

Major—for the Bachelor of Arts, 48 hours beyond Polish 106, including Polish 201, 202, 203, 221, 222, and 223; Slavic 224; 12 hours of additional courses in Polish at the 200 level and 8 hours at the 300 level.

Minor—
1. Those who do not satisfy the college language requirement in Polish take a total of 32 hours, including Polish 101 through 106 and 8 hours at the 200 and 300 levels, chosen with the approval of the Department of Slavic Languages and Literatures.
2. Those who have competence at the level of Polish 104 or beyond take 20 hours at the 200 and 300 levels, chosen with the approval of the Department of Slavic Languages and Literatures.

Teacher Education in Polish: Requirements for Teaching in Secondary Schools

Major—for the Bachelor of Arts, 52 hours beyond the 100 level, including:
Polish 201, 202, 203, 204, 207, 221, 222, and 223; Slavic 224; Polish 301, and either 302 or 303.
8 hours from: Polish 215, 216, 340 341 342 or Slavic 225.

Minor—32 hours, including:
Polish 104, 105, 106, 201, 202, 203, 204, and 207.

Departmental Distinction: A 4.50 (A=5.00) average in all department lower-division courses, and a 4.75 average in all department upper-division courses taken.

Courses

Polish (Pol)

101. ELEMENTARY POLISH I. 4 HOURS. Four additional half hours per week in the language laboratory. For students who have had no work in Polish.

102. ELEMENTARY POLISH II. 4 HOURS. Four additional half hours per week in the language laboratory. Continues Polish 101. Prerequisite: Pol 101 or the equivalent.

103. ELEMENTARY POLISH III. 4 HOURS. Four additional half hours per week in the language laboratory. Continues Polish 102. Prerequisite: Pol 102 or the equivalent.

104. INTERMEDIATE POLISH I. 4 HOURS. Reading, oral-aural practice, and systematic grammar. Prerequisite: Pol 103 or the equivalent. Students who have not taken Polish 103 at this University must take the Polish placement test.

105. INTERMEDIATE POLISH II. 4 HOURS. Continues Polish 104. Prerequisite: Pol 104 or the equivalent. Students who have not taken Polish 104 at this University must take the Polish placement test.

106. INTERMEDIATE POLISH III. 4 HOURS. Continues Polish 105. Prerequisite: Pol 105 or the equivalent. Students who have not taken Polish 105 at this University must take the Polish placement test.

151. HENRYK SIENKIEWICZ. 4 HOURS. Same as Humanities 151. The most famous Polish writer and Nobel Prize winner in 1905; discussion of his major works. Knowledge of Polish is not required.

152. ADAM MICKIEWICZ. 4 HOURS. Same as Humanities 152. The greatest Polish poet; a description of his Romantic lyrics, drama, and poetical epic. Knowledge of Polish is not required.

153. ALEXANDER FREDRO. 4 HOURS. Same as Humanities 153. The greatest Polish comedy playwright; a description of his major works. Knowledge of Polish is not required.

154. STANISLAW IGNACY WITKIEWICZ. 4 HOURS. Same as Humanities 154. A forerunner of the Theater of the Absurd and a popular figure in contemporary world theater; discussion of his major works. Knowledge of Polish is not required.

155. JAN KOCHANOWSKI. 4 HOURS. Same as Humanities 155. The greatest Polish Renaissance poet and creator of Polish poetry; a description of his major works. Knowledge of Polish is not required.

201. POLISH COMPOSITION AND CONVERSATION I. 4 HOURS. Composition and conversation, systematic grammar, vocabulary development, aural comprehension. Pronunciation drill, simple applied phonetics. Prerequisite: Pol 106 or the equivalent.

202. POLISH COMPOSITION AND CONVERSATION II. 4 HOURS. Continues Polish 201. Prerequisite: Pol 201 or the equivalent.

203. POLISH COMPOSITION AND CONVERSATION III. 4 HOURS. Continues Polish 202. Prerequisite: Pol 202 or the equivalent.

215. POLISH CULTURE AND CIVILIZATION I. 4 HOURS. Given in English. Literary, philosophical, and theological works to the end of the eighteenth century; the main cultural forces that shaped Polish thought and manners. Prerequisite: Junior standing or consent of the instructor.

216. POLISH CULTURE AND CIVILIZATION II. 4 HOURS. Given in English. Continues Polish 215. The nineteenth and twentieth centuries. Prerequisite: Junior standing or consent of the instructor.

221. INTRODUCTION TO POLISH LITERATURE I. 4 HOURS. Same as Humanities 221. Major trends and authors from the Renaissance to Romanticism: Rey, Kochanowski, Krasicki, and others. Prerequisite: Junior standing or consent of the instructor.

222. INTRODUCTION TO POLISH LITERATURE II. 4 HOURS. Same as Humanities 222. Major trends and authors of the nineteenth century: Mickiewicz, Slowacki, Krasinski, Norwid, Fredro, Orzeszkowa, Sienkiewicz, and Prus. Prerequisite: Junior standing or consent of the instructor.

223. INTRODUCTION TO POLISH LITERATURE III. 4 HOURS. Same as Humanities 223. Major trends and authors of the twentieth century: Wyspianski, Zeromski, Reymont, Tuwim, and others. Prerequisite: Junior standing or consent of the instructor.

299. INDEPENDENT STUDY. 1 TO 6 HOURS. May be repeated for credit. Investigation of special problems under the general direction of a staff member. Prerequisite: Consent of the instructor and the head of the department.

301. ADVANCED POLISH CONVERSATION AND COMPOSITION I. 4 HOURS. Development of oral and writing skills: expanding vocabulary, developing style. Aural comprehension practice. Prerequisite: Pol 203 or the equivalent.

302. ADVANCED POLISH CONVERSATION AND COMPOSITION II. 4 HOURS. Continues Polish 301. Prerequisite: Pol 301 or the equivalent.

303. ADVANCED POLISH CONVERSATION AND COMPOSITION III. 4 HOURS. Continues Polish 302. Prerequisite: Pol 302 or the equivalent.

340. POLISH ROMANTICISM. 4 HOURS. Polish-Russian literary relationship during the Romantic period; major works of Mickiewicz, Slowacki, Krasinski, and Norwid. Prerequisite: Junior standing or consent of the instructor.

341. THE POLISH NOVEL. 4 HOURS. Major works from the eighteenth century to the present. Emphasis on Krasicki, Sienkiewicz, Prus, Orzeszkowa, Zeromski, Nalkowska, Dabrowska. Prerequisite: Junior standing or consent of the instructor.

342. POLISH DRAMA. 4 HOURS. Major plays of Fredro, Mickiewicz, Slowacki, Krasinski, Wyspianski, Witkiewicz, Gombrowicz, and Mrozek. Prerequisite: Junior standing or consent of the instructor.

399. INDEPENDENT STUDY. 1 TO 4 HOURS. Investigation of special problems under the general direction of a staff member. Prerequisite: Consent of the instructor and the head of the department.

Russian (Russ)

101. ELEMENTARY RUSSIAN I. 4 HOURS. Four additional half hours per week in the language laboratory. For students who have had no work in Russian.

102. ELEMENTARY RUSSIAN II. 4 HOURS. Four additional half hours per week in the language laboratory. Continues Russian 101. Prerequisite: Russ 101 or the equivalent.

103. ELEMENTARY RUSSIAN III. 4 HOURS. Four additional half hours per week in the language laboratory. Continues Russian 102. Prerequisite: Russ 102 or the equivalent.

104. ELEMENTARY RUSSIAN IV. 4 HOURS. Four additional half hours per week in the language laboratory. Continues Russian 103. Prerequisite: Russ 103 or the equivalent.

111. INTENSIVE ELEMENTARY RUSSIAN I. 8 HOURS. Three additional hours per week in the language laboratory. For students who have had no work in Russian. Intensive course that combines the material in Russian 101 and 102.

112. INTENSIVE ELEMENTARY RUSSIAN II. 8 HOURS. Three additional hours per week in the language laboratory. Intensive course that combines the material in Russian 103 and 104. Prerequisite: Russ 111 or the equivalent.

115. INTENSIVE RUSSIAN READING I. 8 HOURS. Intensive elementary course for those students seeking reading ability in scientific or technical material in the humanities, social sciences, and natural sciences. Morphology, basic syntax, reading of texts, and the mechanics of translating from Russian.

116. INTENSIVE RUSSIAN READING II. 8 HOURS. Continues Russian 115. Prerequisite: Russ 115.

121. INTERMEDIATE RUSSIAN I. 4 HOURS. Four additional half hours per week in the language laboratory. Continues Russian 104. Prerequisite: Russ 104 or 112 or 116 or the equivalent.

122. INTERMEDIATE RUSSIAN II. 4 HOURS. Four additional half hours per week in the language laboratory. Continues Russian 121. Prerequisite: Russ 121 or the equivalent.

131. RUSSIAN READING III. 4 HOURS. Continues Russian 116. Intermediate course for students seeking reading ability in scientific or technical material in the various sciences. Prerequisite: Russ 116 or 104 or 112.

132. RUSSIAN READING IV. 4 HOURS. Continues Russian 131. Prerequisite: Russ 131.

141. DOSTOEVSKY. 4 HOURS. Same as Humanities 141. Discussion of selected short stories and novels by Fyodor Dostoevsky. Knowledge of Russian is not required.

142. TOLSTOY. 4 HOURS. Same as Humanities 142. Discussion of the writings of Leo Tolstoy. Knowledge of Russian is not required.

143. CHEKHOV. 4 HOURS. Same as Humanities 143. Discussion of selected short stories and plays by Anton Chekhov. Knowledge of Russian is not required.

144. GOGOL. 4 HOURS. Same as Humanities 144. Discussion of selected prose works and plays by Nikolai Gogol. Knowledge of Russian is not required.

145. SOLZHENITSYN. 4 HOURS. Same as Humanities 145. Discussion of selected short stories and novels by Alexander Solzhenitsyn. Knowledge of Russian is not required.

146. WOMEN IN RUSSIAN LITERATURE. 4 HOURS. Same as Humanities 146 and Women's Studies 146. Major works that reflect and shaped the attitudes to-

ward, and experience of, women in Russia from earliest times to the Soviet period. Knowledge of Russian is not required.

201. SPEAKING AND WRITING RUSSIAN I. 4 HOURS. Conversation and composition, systematic grammar, vocabulary development, aural comprehension. Prerequisite: Russ 122 or the equivalent.

202. SPEAKING AND WRITING RUSSIAN II. 4 HOURS. Continues Russian 201. Prerequisite: Russ 201 or the equivalent.

203. SPEAKING AND WRITING RUSSIAN III. 4 HOURS. Continues Russian 202. Prerequisite: Russ 202.

204. RUSSIAN PHONOLOGY. 4 HOURS. Required for Russian teaching majors. Extensive study of the sound system of Russian from both a theoretical and practical standpoint, including corrective exercises. Prerequisite: Russ 122 or consent of the instructor.

207. THE TEACHING OF RUSSIAN IN THE SECONDARY SCHOOL. 4 HOURS. Modern techniques, including the language laboratory. Prerequisite: Russ 203 or consent of the instructor.

215. MAIN CURRENTS OF RUSSIAN THOUGHT I. 4 HOURS. Literary, philosophical, and theological works from the beginning to 1725; the main cultural forces that shaped Russian thought and manners. Given in English. Prerequisite: Junior standing or consent of the instructor.

216. MAIN CURRENTS OF RUSSIAN THOUGHT II. 4 HOURS. Continues Russian 215. From 1725 to the October Revolution of 1917. Given in English. Prerequisite: Junior standing or consent of the instructor.

221. INTRODUCTION TO RUSSIAN LITERATURE I. 4 HOURS. Same as Humanities 231. Russian literature from 988 to 1830. Prerequisite: Junior standing or consent of the instructor.

222. INTRODUCTION TO RUSSIAN LITERATURE II. 4 HOURS. Same as Humanities 232 and Religious Studies 222. Prose fiction from 1830 to 1880. Prose and poetry from 1880 to 1905. Special attention to the works of Pushkin, Lermontov, Gogol, Turgenev, Dostoevsky, and Tolstoy and to the "esthetic revival" after 1890. Prerequisite: Junior standing or consent of the instructor.

223. INTRODUCTION TO RUSSIAN LITERATURE III. 4 HOURS. Same as Humanities 233. Twentieth-century literature from 1905 to the present; special attention to Gorky, Bunin, Sholokhov, Pasternak, and others. Prerequisite: Junior standing or consent of the instructor.

230. STUDIES IN THE RUSSIAN SHORT STORY. 4 HOURS. The Russian short story as a literary form. Close readings of selected short stories of the nineteenth-century masters. Prerequisite: Junior standing or consent of the instructor.

260. RUSSIAN FOR THE SCIENTIST. 4 HOURS. Offered on request. May not be taken to fulfill foreign language graduation requirements. An accelerated course in the structure of Russian. Morphology, basic syntax, reading texts, and the mechanics of translating from Russian. For those seeking reading ability in technical material in the humanities, social sciences, or natural sciences. Prerequisite: Junior standing.

299. INDEPENDENT STUDY. 1 TO 6 HOURS. May be repeated for credit. Prerequisites: Russ 122 or the equivalent and approval of the department.

301. ADVANCED RUSSIAN CONVERSATION AND COMPOSITION I. 4 HOURS. The development of oral and writing skills: vocabulary building, style development. Aural comprehension practice. Prerequisite: Russ 203 or the equivalent.

302. ADVANCED RUSSIAN CONVERSATION AND COMPOSITION II. 4 HOURS. Continues Russian 301. Prerequisite: Russ 301 or the equivalent.

303. ADVANCED RUSSIAN CONVERSATION AND COMPOSITION III. 4 HOURS. Continues Russian 302. Prerequisite: Russ 302 or the equivalent.

307. METHODOLOGICAL PROBLEMS IN RUSSIAN INSTRUCTION. 4 HOURS. Analysis and discussion of special methodological problems connected with the teaching of Russian. Prerequisite: Russ 203 or the equivalent.

308. RUSSIAN APPLIED LINGUISTICS FOR TEACHERS. 4 HOURS. Classroom application of linguistic principles and techniques. Prerequisite: Russ 203 or the equivalent.

320. RUSSIAN POETRY: 1750 TO 1830. 4 HOURS. Lomonosov, Derzhavin, Krylov, Pushkin, and others. Prerequisite: 24 hours of Russian or consent of the instructor.

321. RUSSIAN POETRY: 1830 TO 1890. 4 HOURS. Zhukovsky, Lermontov, Nekrasov, Tyutchev, Fet, and others. Prerequisite: 24 hours of Russian or consent of the instructor.

322. RUSSIAN POETRY: 1890 TO THE PRESENT. 4 HOURS. Bely, Blok, Akhmatova, Mandelshtam, Yesenin, Mayakovsky, Pasternak, Yevtushenko, Voznesensky, and others. Prerequisite: 24 hours of Russian or consent of the instructor.

324. STUDIES IN NINETEENTH-CENTURY RUSSIAN LITERARY CRITICISM. 4 HOURS. Belinsky, Chernyshevsky, Herzen, Dobrolyubov, Pisarev, L.N. Tolstoy. Prerequisite: Slav 224.

327. RUSSIAN DECADENCE AND SYMBOLISM. 4 HOURS. Poetry and prose from 1890 to 1910. Briusov, Sologub, Balmont, Belyi, Blok, and others. Prerequisite: 24 hours of Russian or consent of the instructor.

332. PROBLEMS IN RUSSIAN GRAMMAR. 4 HOURS. May be repeated once for credit. Required for Russian teaching majors. Intensive study and review of problems of Russian grammar and syntax. Prerequisite: Russ 201 or consent of the instructor.

350. THE RUSSIAN NOVEL TO 1860. 4 HOURS. Pushkin, Lermontov, Gogol, Goncharov, Chernyshevsky. Prerequisite: Junior standing or consent of the instructor.

351. THE RUSSIAN NOVEL: 1860 TO 1900. 4 HOURS. Turgenev, Saltykov-Shchedrin, L.N. Tolstoy, Dostoevsky. Prerequisite: Junior standing or consent of the instructor.

352. THE RUSSIAN NOVEL: 1900 TO THE PRESENT. 4 HOURS. Gorky, Zamyatin, Sholokhov, A.N. Tolstoy, Ehrenburg, Pasternak, Bulgakov, Solzhenitsyn. Prerequisite: Junior standing or consent of the instructor.

360. NINETEENTH-CENTURY RUSSIAN DRAMA. 4 HOURS. Major dramatists from Griboedov to Chekhov. Prerequisite: Slav 224 or Spch 122 or consent of the instructor.

361. TWENTIETH-CENTURY RUSSIAN DRAMA. 4 HOURS. Major authors from Gorky to the present. Prerequisite: Slav 224 or Spch 122 or consent of the instructor.

399. INDEPENDENT STUDY. 1 TO 4 HOURS. Investigation of special problems under the general direction of a staff member. Prerequisite: Consent of the instructor and the head of the department.

Slavic Languages and Literatures (Slav)

101. ELEMENTARY SERBO-CROATIAN I. 4 HOURS. Four additional half hours per week in the language laboratory. For students who have had no work in Serbo-Croatian.

102. ELEMENTARY SERBO-CROATIAN II. 4 HOURS. Four additional half hours per week in the language laboratory. Continues Slavic Languages and Literatures 101. Prerequisite: Slav 101 or the equivalent.

103. ELEMENTARY SERBO-CROATIAN III. 4 HOURS. Four additional half hours per week in the language laboratory. Continues Slavic Languages and Literatures 102. Prerequisite: Slav 102 or the equivalent.

104. INTERMEDIATE SERBO-CROATIAN I. 4 HOURS. Continues Slavic Languages and Literatures 103. Prerequisite: Slav 103 or the equivalent.

105. INTERMEDIATE SERBO-CROATIAN II. 4 HOURS. Continues Slavic Languages and Literatures 104. Prerequisite: Slav 104 or the equivalent.

106. INTERMEDIATE SERBO-CROATIAN III. 4 HOURS. Continues Slavic Languages and Literatures 105. Prerequisite: Slav 105 or the equivalent.

215. UKRAINIAN CULTURE AND CIVILIZATION. 4 HOURS. Literary, philosophical, and artistic achievements in the Ukraine. Prerequisite: Junior standing or consent of the instructor.

216. OLD SLAVIC AND UKRAINIAN FOLKLORE AND MYTHOLOGY. 4 HOURS. The folklore and mythological heritage of the old Slavic and Ukrainian civilizations.

217. STUDIES IN UKRAINIAN ARTS. 4 HOURS. Chronological study of the development of Ukrainian arts.

218. PATTERNS OF UKRAINIAN THOUGHT. 4 HOURS. Ukrainian intellectual currents and ideas. Prerequisite: Sophomore standing or consent of the instructor.

219. SERBIAN FOLKLORE AND MYTHOLOGY. 4 HOURS. Same as Humanities 219. The folklore and mythological heritage of the Serbian civilization.

220. SERBIAN CULTURE AND CIVILIZATION. 4 HOURS. Survey of the development of Serbian culture and thought from earliest times to the present: intellectual currents, art, architecture, folklore, and society.

221. STUDIES IN SERBIAN LITERATURE I. 4 HOURS. Same as Humanities 261. From the beginnings to the Age of Romanticism; medieval literature, popular oral tradition, rationalist revival. Prerequisite: Sophomore standing or consent of the instructor.

222. STUDIES IN SERBIAN LITERATURE II. 4 HOURS. Same as Humanities 262. Romantic period and early realists; prose and poetry. Prerequisite: Sophomore standing or consent of the instructor.

223. STUDIES IN SERBIAN LITERATURE III. 4 HOURS. Same as Humanities 263. Realists of the turn of the century. The modernist movement from the *fin-de-siecle* to World War II. The postwar period; concentration on Nobel Prize winner Ivo Andric. Prerequisite: Sophomore standing or consent of the instructor.

224. METHODS OF LITERARY ANALYSIS. 4 HOURS. Selected masterpieces of Slavic literature analyzed from the structural, thematic, historical, psychological/sociological, biographical, and linguistic points of view. Prerequisite: Junior standing or consent of the instructor.

225. SLAVIC ROMANTICISTS: PUSHKIN, MICKIEWICZ, AND SHEVCHENKO. 4 HOURS. Same as Humanities 225. Comparative study of the three leading Slavic Romanticists and their ties with the Romantic Movement of the West.

226. SLAVIC EXPERIMENTAL DRAMA. 4 HOURS. Same as Humanities 226. Modern experimental playwriting in Russian, Polish, Czechoslovak, Yugoslav, and Ukrainian literatures.

227. CONTEMPORARY SLAVIC POETRY. 4 HOURS. Same as Humanities 227. The most representative contemporary poets of Russia, Poland, Czechoslovakia, Yugoslavia, and the Ukraine. Prerequisite: Sophomore standing or consent of the instructor.

245. MASTERPIECES OF UKRAINIAN LITERATURE. 4 HOURS. Survey of the Ukrainian literary scene from the Middle Ages to Shevchenko. Prerequisite: Junior standing or consent of the instructor.

246. SHEVCHENKO AND UKRAINIAN ROMANTICISM. 4 HOURS. The life and work of the leading twentieth-century Ukrainian author in relation to the literary endeavors of his more prominent predecessors, contemporaries, and successors. Prerequisite: Sophomore standing or consent of the instructor.

247. MODERN UKRANIAN MASTERS. 4 HOURS. The works of Ivan Franko, Myxailo Kocjubynskyj, Vasyl Stefanyk, and Lesja Ukrainka. Prerequisite: Sophomore standing or consent of the instructor.

248. CONTEMPORARY UKRAINIAN LITERATURE. 4 HOURS. Early modernists, neoclassicists, the *visnyk* group, literature of the 1920s, socialist realists, poets of the 1960s, literature in exile. Prerequisite: Sophomore standing or consent of the instructor.

270. EDUCATIONAL PRACTICE WITH SEMINAR I. 8 HOURS. Same as Education 270. The first half of a two-segment sequence of practice teaching, in-

cluding seminar, to meet certification requirements for teaching in the elementary or secondary school. Prerequisites: Ed 250, admission to advanced standing, and recommendation of the department of specialization.

271. EDUCATIONAL PRACTICE WITH SEMINAR II. 8 HOURS. Same as Education 271. The second half of a two-segment sequence of practice teaching, including seminar, to meet certification requirements for teaching in the elementary or secondary school. Prerequisites: Ed 250, credit or concurrent registration in Slav 270, admission to or continuation of advanced standing, and recommendation of the department of specialization.

277. STRUCTURE OF UKRAINIAN. 4 HOURS. Comparative study of Ukrainian and other Eastern European Slavic languages; emphasis on the differences in their phonology, morphology, and syntax.

299. INDEPENDENT STUDY. 1 TO 6 HOURS. May be repeated for credit. Investigation of special problems under the general direction of a staff member. Prerequisite: Consent of the instructor and the head of the department.

300. INTRODUCTION TO BIBLIOGRAPHY AND RESEARCH. 4 HOURS. Bibliographical and research tools applicable to Slavic studies. Prerequisite: Consent of the instructor.

310. INTRODUCTION TO SLAVIC LINGUISTICS. 4 HOURS. Survey of fundamental linguistic concepts; theoretical methods most applicable to analysis of the Slavic languages. Prerequisites: Graduate standing and two years of Russian or some other Slavic language. Advanced undergraduate students with exceptional ability may be admitted with the consent of the instructor.

340. FOREIGN LANGUAGE COMPUTER-ASSISTED INSTRUCTION. 4 HOURS. Same as French 385, German 340, and Spanish 375. Does not count toward the major. Basic introduction to the use of the TUTOR language and the PLATO IV system in foreign language instruction. Each student designs and implements an instructional module as a term project. Prerequisite: Completion of intermediate level course work, or the equivalent, of either a Salvic language, French, German, or Spanish.

390. ENGLISH-SLAVIC LINGUISTIC INTERACTION. 4 HOURS. The structural, phonetic, and idiomatic influence of English on the various Slavic languages spoken in the American Slavic ethnic communities. Slavic influence on English spoken in these communities. Prerequisite: Slav 310.

392. THE STRUCTURE OF MODERN SERBO-CROATIAN. 4 HOURS. Synchronic linguistic analysis of major and minor parts of speech. Word formation, with emphasis on substantives, adjectives, and verbs. Fundamentals of syntax. Prerequisite: Slav 310 or consent of the instructor.

399. INDEPENDENT STUDY. 1 TO 4 HOURS. Investigation of special problems under the general direction of a staff member. Prerequisite: Consent of the instructor and the head of the department.

Sociology

Professors: Robert L. Hall, PhD, Acting Head of the Department; Bernard H. Baum, PhD; M. Rue Bucher, PhD; James T. Carey, PhD; David B. Carpenter, PhD; Robert E. Corley, PhD; Robert L. Hall, PhD; John W.C. Johnstone, PhD; Peter P. Klassen, PhD (Emeritus); Roger W. Little, PhD; Mildred A. Schwartz, PhD; Ethel Shanas, PhD; Richard Videbeck, PhD.

Associate Professors: Daniel J. Amick, PhD; Pauline B. Bart, PhD; Kathleen S. Crittenden, PhD; William W. Erbe, PhD; John W. Martin, PhD; Richard Warnecke, PhD.

Assistant Professors: Janet M. Alger, PhD; Steven F. Alger, PhD; Calvin P. Bradford, PhD; William Bridges, PhD; Michael R. Buren, PhD; Brigitte M. Erbe, PhD; Phyllis A. Ewer, PhD; Hazel S. Fisher, PhD; Eileen C. Gardner, PhD; Helen R. Miller, PhD; James L. Norr, PhD; David M. Rubinstein, PhD; Gerald M. Swatez, PhD; Larry L. Tifft, PhD; Philip R. Weinberger, PhD; Mary Glenn Wiley, PhD.

Lecturers: Diana M. Pearce, MA; Diana Scully, MA; Jeffrey Slovak, MA.

Major—for the Bachelor of Arts, 44 hours, including:
- Sociology 100 or 200
- Sociology 201
- Sociology 202
- 8 hours elected from Sociology 203, 300, 301, 302, 303, 305, 306, 309, 384, 385, 386, or 387
- 24 additional hours in sociology, of which 8 hours must be at the 300 level, excluding Sociology 389
- Not more than 12 hours of independent study (Sociology 289, 299, 389) may be counted toward the 44-hour major requirement.

Departmental Distinction: The requirements for candidacy are a 4.00 (A=5.00) all-University grade point average, 4.00 grade point average in sociology courses, and senior standing. The requirements for graduation with Departmental Distinction are a 4.00 all-University grade point average, 4.00 grade point average in sociology courses, completion of all requirements for a major in sociology, and completion of Sociology 287 and 288 with at least a B. These requirements apply to any student who declared a major in sociology in September 1967 or later.

Minor—20 hours in sociology, at least 12 of which must be in courses at the 200 or 300 level.

Courses (Soc)

100. INTRODUCTION TO SOCIOLOGY. 4 HOURS. Analysis and description of the structure and dynamics of human society. The application of scientific methods to the observation and analysis of social norms, groups, intergroup relations, social change, social stratification, and institutions.

110. INTRODUCTORY SOCIAL PSYCHOLOGY. 4 HOURS. Credit is not given for Sociology 110 if the student has credit in Sociology 210 or Psychology 255. Survey of the major concepts and studies in social psychology. Prerequisite: Soc 100.

120. SOCIAL PROBLEMS. 4 HOURS. Survey of the incidence and character of social problems in contemporary society. Prerequisite: Soc 100.

197. GENERAL EDUCATION COLLOQUIUM ON SOCIOLOGY. 4 HOURS. May be repeated for credit with the consent of the instructor. Special topics designed for general education. Prerequisite: Soc 100.

200. GENERAL SOCIOLOGY. 4 HOURS. Credit is not given for Sociology 200 if the student has credit in Sociology 100. Intended primarily for juniors and seniors who have not taken Sociology 100. Critical analysis of theory and research in the major areas of sociology. May be substituted for Sociology 100 as a prerequisite for more advanced courses in sociology. Prerequisite: Junior or senior standing or consent of the instructor.

201. INTRODUCTORY SOCIOLOGICAL STATISTICS. 4 HOURS. 3 hours of lecture, 2 hours of laboratory per week. The basic statistical methods used in the analysis of sociological data. Prerequisites: Math 100, Soc 100.

202. INTRODUCTION TO SOCIOLOGICAL RESEARCH. 4 HOURS. 3 hours of lecture, 1 hour of laboratory per week. Survey of the principal methods used in the analysis of sociological data: problem and concept formation, design of research, sampling, and inference. Prerequisite: Soc 100.

203. SOCIOLOGICAL ANALYSIS. 4 HOURS. 3 hours of lecture, 2 hours of laboratory per week. Application of statistical methods in the analysis of sociological data: multivariate, causal, secondary, data. Observational analysis. Index construction. Prerequisites: Soc 201, 202.

210. INTRODUCTION TO SOCIAL PSYCHOLOGY FOR UPPERCLASSMEN. 4 HOURS. Credit is not given for Sociology 210 if the student has credit in Sociology 110 or Psychology 255. Critical analysis of theory and research in major areas of social psychology. Prerequisites: Junior standing and Soc 100.

215. COLLECTIVE BEHAVIOR. 4 HOURS. Crowds and diffuse collectivities; collective processes, such as panics, crazes, and hostile mobs; the relationship between societal conditions and occurrence of these processes; the relationship of collective behavior to social change. Prerequisite: Soc 100.

216. SOCIAL MOVEMENTS. 4 HOURS. Origins of social conflict and alienation; development and articulation of ideologies and mass organizations; consequences of success and failure of social movements and, with special emphasis, political movements. Prerequisite: Soc 100.

220. SOCIOLOGY OF MASS COMMUNICATIONS. 4 HOURS. Credit is not given for Sociology 220 if the student has credit in Political Science 227. Sociological analysis of the mass media of communication; empirical studies of the impact of the media on American society and culture; impact of television on children; effects of the media upon attitudes and opinions; processes by which news is created and transmitted. Prerequisite: Soc 100.

225. RACIAL AND CULTURAL MINORITIES. 4 HOURS. Sociological and social-psychological analysis of racial, religious, or other ethnic groups; some of the historical and current social problems resulting from their relationships in society. Prerequisite: Soc 100.

230. SOCIOLOGY OF DEVIANCE. 4 HOURS. Same as Criminal Justice 230. Deviant behavior and the various theoretical orientations advanced to explain it. Prerequisite: Soc 100.

231. CRIMINOLOGY. 4 HOURS. Same as Criminal Justice 231. The nature and extent of crime in American society; assessment and evaluation of the various

factors and influences that lead to criminal behavior; various measures proposed for the control of criminal behavior. Prerequisite: Soc 230.

232. JUVENILE DELINQUENCY. 4 HOURS. Same as Criminal Justice 232. Various conceptions of the nature of juvenile delinquency and its causes; the juvenile-court movement; juvenile detention; treatment of juvenile offenders; delinquency control programs. Prerequisite: Soc 230.

243. SOCIOLOGY OF EDUCATION. 4 HOURS. The relationship of the educational system to the social structure; major emphasis on the role of education in an advanced technological society. Prerequisite: 8 hours of sociology.

245. MARRIAGE AND FAMILY. 4 HOURS. The functions of marriage and the family considered in their social context; special reference to mate selection, socialization and adjustment to marital roles, and phases of family life cycle. Prerequisite: Soc 100 or consent of the instructor.

246. THE SOCIOLOGY OF RELIGION. 4 HOURS. Same as Religious Studies 246. Analysis of the structures and functions of religious institutions, particularly as found in modern society. Special attention to the interplay among religion and other social phenomena, such as economics and politics; the social-psychological aspects of religious behavior; current trends in religious institutions. Prerequisite: Soc 100.

265. THE SOCIOLOGY OF POLITICS. 4 HOURS. Political socialization, beliefs, and behavior; development of conflict and consensus; political institutions and the process of institutionalization; power and the power structures. Prerequisite: Soc 100.

271. POPULATION AND HUMAN ECOLOGY. 4 HOURS. 3 hours of lecture, 2 hours of laboratory per week. A general introduction to population characteristics and trends in population dynamics—fertility, mortality, and migration. Prerequisite: Soc 100 or the equivalent.

276. URBAN SOCIOLOGY. 4 HOURS. The application of sociological concepts and data in the study of the city and urban areas. Prerequisite: Soc 100.

287. SENIOR SEMINAR I. 2 HOURS. No credit is given for Sociology 287 until completion of 288. Students report to the seminar on current research and developments among sociologists and submit to questions, criticism, and evaluation of their reports. Prerequisites: Sociology major, senior standing, and all-University 4.00 average.

288. SENIOR SEMINAR II. 2 HOURS. Continues Sociology 287. Students report to the seminar on current research and developments among sociologists and submit to questions, criticism, and evaluation of their reports. Prerequisite: Soc 287.

289. SUPERVISED STUDY OR RESEARCH. 1 TO 4 HOURS. Special projects arranged in advance by faculty or student initiative. Prerequisites: 12 hours of sociology, consent of the instructor, and approval of the department.

290. EDUCATIONAL PRACTICE WITH SEMINAR I. 8 HOURS. Same as Education 270. The first half of a two-segment sequence of practice teaching, including seminar, to meet certification requirements for teaching in the elementary or secondary school. Prerequisites: Ed 250, admission to advanced standing, and recommendation of the department of specialization.

291. EDUCATIONAL PRACTICE WITH SEMINAR II. 8 HOURS. Same as Education 271. The second half of a two-segment sequence of practice teaching, including seminar, to meet certification requirements for teaching in the elementary or secondary school. Prerequisites: Ed 250, credit or concurrent registration in Soc 290, admission to or continuation of advanced standing, and recommendation of the department of specialization.

297. GENERAL EDUCATION COLLOQUIUM ON SOCIOLOGY. 4 HOURS. May be repeated for credit with the consent of the instructor. Special topics designed for general education for upperclassmen. Prerequisite: Junior standing and Soc 100.

299. HONORS COURSE. 2 TO 4 HOURS. May be repeated with the permission of the department. Individual study or research. Prerequisites: Major in sociology, Soc 201, 202, honors standing in the college, consent of the instructor, and approval of the department.

300. EXPLORATORY SOCIAL DATA ANALYSIS. 4 HOURS. 3 hours of lecture-discussion, 2 hours of laboratory per week. Introduction to the analysis of social data; relationship between data analysis and measurement operations; transformations of data; construction of indices; graphical display of data; analysis and interpretation of residuals. Prerequisites: Soc 201, 202, and 4 hours of upper-division sociology or consent of the instructor.

301. SOCIOLOGICAL STATISTICS. 4 HOURS. 3 hours of lecture, 2 hours of laboratory per week. Intended primarily for graduate and advanced undergraduate sociology majors. Introduction to statistical tests of sociological hypotheses; estimation procedures; selected statistical procedures commonly used in sociology. Prerequisites: Soc 201 and 202 or consent of the instructor.

302. ADVANCED STATISTICS IN SOCIOLOGY. 4 HOURS. Analysis of contingency tables; multiple and partial, linear and nonlinear correlation; analysis of variance. Prerequisite: Soc 301.

305. RESEARCH TECHNIQUES IN SOCIOLOGY. 4 HOURS. 3 hours of lecture-discussion, 2 hours of laboratory per week. Several common techniques of collecting and organizing sociological data, such as questionnaires and interview schedules, systematic observation, scaling, nonreactive measures, content analysis. Prerequisites: Soc 201, 202 or the equivalents and consent of the instructor.

306. RESEARCH DESIGN IN SOCIOLOGY. 4 HOURS. Formulation of researchable problems; designing research procedures and selecting techniques to fit particular objectives; planning controls to distinguish among alternative hypotheses. Prerequisite: Soc 301 or consent of the instructor.

309. TOPICS IN SOCIOLOGICAL RESEARCH. 4 HOURS. May be repeated for up to 12 hours of credit. Intensive analysis of a specialized topic, announced when the class is scheduled. Prerequisite: Soc 203 or consent of the instructor.

314. SOCIAL PSYCHOLOGY OF ORGANIZATIONS. 4 HOURS. Sociological analysis of the mutual influence of individuals and social organizations through such organizational processes as recruitment, socialization, interaction, innovation, and social control. The entire range of social organizations is considered, such as politics, social movements, communities, bureaucracies, families, gangs, friendships, encounters. Prerequisites: Soc 110 or 210 and Soc 201, 202 or consent of the instructor.

316. ADULT SOCIALIZATION. 4 HOURS. Socialization as a process of induction into new roles, which occurs throughout the life cycle; the process is analyzed at both social-psychological and social-systems levels with illustrations from various settings, such as marriage and family, illness, migration, and particularly socialization into occupations and professions. Prerequisites: Soc 201 and 202 or consent of the instructor.

318. SOCIOLOGY OF LITERATURE. 4 HOURS. How literature is influenced by and in turn influences social forces; effects of social class, political and economic factors, and religious, ethnic, and racial affiliations on literary works, attitudes of writers, relationships to publics, reward systems, and related matters. Prerequisites: Soc 201, 202, and 6 hours of literature (any department) or consent of the instructor.

319. TOPICS IN SOCIAL PSYCHOLOGY. 4 HOURS. May be repeated for up to 12 hours of credit. Intensive analysis of a specialized topic, announced at the time the class is scheduled. Prerequisites: Soc 110 or 210 and Soc 201, 202 or consent of the instructor.

325. AGE GROUPS AND THE SOCIAL ORDER. 4 HOURS. The relation of age groups to social structure; the demographic, sociological, and social-psychological conditions affecting the salience of age as a basis of social organization; recent writings on adolescents and youth; the theory of subcultures as applied to youth groups; relations between generations; current directions in the study of youth groups, both conventional and deviant. Prerequisite: Soc 201 and 202 or consent of the instructor.

326. RACE AND ETHNIC RELATIONS. 4 HOURS. Critical examination of the conceptual frameworks for studying race and ethnic relations. Prerequisite: 8 hours of upper-division sociology, including Soc 225, or consent of the instructor.

327. TOPICS IN RACE AND ETHNIC RELATIONS. 4 HOURS. May be repeated for up to 12 hours of credit. Intensive examination of a specialized topic, announced at the time the class is scheduled. Prerequisite: 8 hours of upper-division sociology, including Soc 225, or consent of the instructor.

333. SOCIOLOGY OF LAW. 4 HOURS. Same as Criminal Justice 333. The origin and development of legal norms in various social settings; their relationship to custom and incorporation in legal and quasi-legal institutions; special attention to the difference between legal and sociological reasoning; law as an instrument of social change. Prerequisites: Soc 201, 202, 230, or CrJ 206, 230, or consent of the instructor.

335. TOPICS IN DEVIANCE AND SOCIAL CONTROL. 4 HOURS. May be repeated for up to 12 hours of credit. Intensive analysis of a specialized topic in the sociology of law, deviance, and social control. Each topic is announced at the time the class is scheduled. Prerequisites: Soc 201, 202, and 230 or consent of the instructor.

341. SOCIAL STRATIFICATION AND CLASSES. 4 HOURS. Nature and systems of differentiation and ranking in societies, emphasis on class structure in the United States; life chances, prestige, status, power, and social mobility in the United States and other societies. Prerequisites: Soc 201 and 202 or consent of the instructor.

343. TOPICS IN THE SOCIOLOGY OF EDUCATION. 4 HOURS. May be repeated for credit up to a total of 12 hours. Intensive examination of a specialized

topic, announced each time the course is scheduled. Prerequisites: Soc 201, 202 or the equivalents and consent of the instructor.

344. INDUSTRIAL SOCIOLOGY. 4 HOURS. Same as Management 344. Analysis of industrial institutions in contemporary society; management, labor, and the community. Prerequisite: 8 hours of sociology.

345. THE SOCIOLOGY OF THE FAMILY. 4 HOURS. The family as a social institution; its functions and forms in contemporary society. Prerequisites: Soc 201 and 202 or consent of the instructor.

346. SOCIOLOGY OF SCIENCE. 4 HOURS. Organizations of the scientific enterprise; emergence of science as a social institution; interrelations with other institutions, such as government, religion, economy, and the arts. Science as a social phenomenon; regularities in scientific behavior; historical and contemporary material. Prerequisites: Soc 201 and 202 or consent of the instructor.

347. SOCIOLOGY OF COMPLEX ORGANIZATIONS. 4 HOURS. Characteristics of business, government agencies, schools, hospitals, and other large-scale organizations; approaches used to study organizations; theoretical and empirical analysis of organizational processes. Prerequisites: Senior standing and Soc 201, 202 or consent of the instructor.

348. TOPICS IN THE SOCIOLOGY OF WAR. 4 HOURS. May be repeated for up to 12 hours of credit. Intensive analysis of selected topics, including comparative military organization, the relationships between military institutions and other institutions of the larger society, and their roles in social conflict and change. Prerequisites: Soc 201, 202 and 8 hours of either sociology, political science, history, or economics or consent of the instructor.

349. SOCIOLOGY OF OCCUPATIONS AND PROFESSIONS. 4 HOURS. Theoretical and empirical analysis of the occupational structure and occupational mobility processes in American and other industrial societies; patterns of recruitment and retention in occupations and professions. Prerequisites: Soc 201 and 202 or consent of the instructor.

351. MEDICAL SOCIOLOGY. 4 HOURS. Same as Urban Planning and Policy 351. Sociological contributions to medicine and public health; social organization and the organization of health services; the sociology of illness. Prerequisites: Soc 201 and 202 or consent of the instructor.

352. SOCIAL EPIDEMIOLOGY: SOCIAL AND CULTURAL FACTORS IN HEALTH AND DISEASE. 4 HOURS. The methods of social epidemiology as they apply to chronic and acute disease; psychosocial factors in illness; individual and social reactions to health and disease. Prerequisites: Soc 201 and 202 or consent of the instructor.

353. HEALTH CARE SYSTEMS. 4 HOURS. The organization of medical care in the United States and other selected countries. Methods of delivering medical care to various populations; emphasis on urban medicine. Prerequisites: Soc 201 and 202 or consent of the instructor.

354. URBAN MEDICINE. 2 HOURS. Same as Preventive Medicine and Community Health 399B (College of Medicine). A combination of preceptorship and seminar-discussion for advanced clinical students; several models of the urban health care setting are examined by direct participation; seminar topics evaluate the nature of and factors contributing to each of the study models; critical ob-

servation and evaluation of special-interest areas, such as private practice, group practice, private hospital, public hospital, health department and public health programs, health care plans, neighborhood health centers, and others as student interest dictates. Prerequisite: Consent of the instructor.

355. TOPICS IN MEDICAL SOCIOLOGY. 4 HOURS. May be repeated for up to 12 hours of credit. Intensive analysis of the methods and literature in a selected subfield of medical sociology. Each topic is announced at the time the class is scheduled. Prerequisites: Soc 351 and consent of the instructor.

357. FIELD EXPERIENCE IN MEDICAL SOCIOLOGY. 2 TO 12 HOURS. Field placement in a medical institution for sociology students. Critical observation and the application of sociological concepts in the study of special-interest areas, such as the role of the patient, patient-doctor relationship, and socialization into the health professions. Prerequisites: 12 hours of upper-division sociology, including Soc 351 or 352 or 353, and consent of the instructor.

361. SOCIAL GERONTOLOGY: OLD PEOPLE IN AMERICA. 4 HOURS. The aged; demographic trends, economic status, physical and social needs, family relationships. Prerequisites: Soc 201 and 202 or consent of the instructor.

365. TOPICS IN THE SOCIOLOGY OF POLITICS. 4 HOURS. May be repeated for up to 12 hours of credit. Intensive analysis of a specialized topic concerning the sociological study of politics. Each topic is announced at the time the class is scheduled. Prerequisites: Soc 201, 202 or the equivalents and consent of the instructor. Sociology 265 is recommended.

366. COMMUNITY POWER STRUCTURE. 4 HOURS. Analysis of the power structure of American communities; special emphasis on the relation between theoretical assumptions and research procedures in current community studies. Prerequisite: Soc 203 or consent of the instructor.

371. POPULATION I. 4 HOURS. 2 hours of lecture, 2 hours of laboratory-discussion per week. Primarily for sociology majors and graduate students. The measurement and study of major trends and differentials in fertility, mortality, population growth, and age-sex composition in the United States and other countries. Emphasis on social and cultural determinants and consequences. Prerequisites: Soc 201 and 202 or consent of the instructor.

372. POPULATION II. 4 HOURS. 2 hours of lecture, 2 hours of laboratory-discussion per week. The measurement and study of major trends in migration, population composition, and marriage and divorce in the United States and other countries; theories and policies regarding population growth in relation to resources; population forecasting. Prerequisite: Soc 371.

373. HUMAN ECOLOGY. 4 HOURS. The relationship between man and the natural environment. Emphasis on the importance of population patterns and human institutions in adaptation. Prerequisites: Soc 201 and 202 or consent of the instructor.

375. TOPICS IN POPULATION AND HUMAN ECOLOGY. 4 HOURS. May be repeated for up to 12 hours of credit. Intensive analysis of a specialized topic, announced at the time the class is scheduled. Prerequisites: Soc 201, 202 or the equivalents and consent of the instructor.

376. TOPICS IN URBAN SOCIOLOGY. 4 HOURS. May be repeated for up to 12 hours of credit. Intensive analysis of a specialized topic, announced at the time

the class is scheduled. Prerequisites: Soc 201, 202 or the equivalents and consent of the instructor.

381. TOPICS IN SOCIAL CHANGE. 4 HOURS. May be repeated for up to 12 hours of credit. Intensive analysis of a specialized topic on processes of social change, announced at the time the class is scheduled. Prerequisites: Soc 201, 202 or the equivalents and consent of the instructor.

384. TOPICS IN SOCIOLOGICAL THEORY CONSTRUCTION. 4 HOURS. May be repeated for up to 12 hours of credit. Intensive study of various contemporary topics. Prerequisites: Soc 201 and 202 or consent of the instructor.

385. HISTORY OF EUROPEAN SOCIOLOGICAL THEORY. 4 HOURS. European foundations of modern sociology from the French Revolution through the aftermath of World War I, with emphasis on selected European theorists who have had a strong impact on modern sociology. Their works are viewed both analytically and historically. Prerequisites: Soc 201 and 202 or consent of the instructor.

386. HISTORY OF AMERICAN SOCIOLOGICAL THEORY. 4 HOURS. American foundations of modern sociology from the Civil War to World War II, with emphasis on selected American theorists who have had a strong impact on contemporary sociology. Their works are viewed both analytically and historically. Prerequisites: Soc 201 and 202 or consent of the instructor.

387. CONTEMPORARY SOCIOLOGICAL THEORY. 4 HOURS. Issues and thinkers associated with the development of sociological theory since World War II, presented analytically and in terms of the social context in which it was written. Stress on the implications of this recent work for future research. Prerequisites: Soc 201 and 202 or consent of the instructor.

389. INDEPENDENT STUDY OR RESEARCH. 2 TO 12 HOURS. Projects for graduate students or undergraduate students with senior standing; may consist of extensive readings in specialized areas of sociology or empirical research. Prerequisites: 24 hours of sociology (excluding Soc 289 and 299), consent of the instructor, and approval of the department.

395. TOPICS IN SOCIAL ORGANIZATION AND INSTITUTIONS. 4 HOURS. May be repeated for up to a total of 12 hours of credit. Intensive analysis of a specialized topic. Prerequisites: Soc 201, 202 or the equivalents and consent of the instructor.

Spanish, Italian, and Portuguese

Klaus Mueller-Bergh, PhD, Acting Head of the Department.

Professors: Eduardo Betoret-Paris, PhD; Ramon Cerda-Masso, PhD (Visiting); Audrey Lumsden-Kouvel, PhD; Jose Sanchez, PhD (Emeritus).

Associate Professors: Violet B. Bergquist, DLit; Manuel Blanco-Gonzalez, MA; James D. Compton, PhD; Ruth El Saffar, PhD; Klaus Mueller-Bergh, PhD.

Assistant Professors: Lucille V. Braun, PhD; Jose Buergo, PhD; Americo Bugliani, PhD; Gerald Dreller, PhD; Norma W. Guice, PhD; Margherita Harwell, PhD; Hector

Hernandez-Nieto, PhD; Steven Hess, PhD (Visiting); Casper J. Morsello, PhD (Visiting); Jerry R. Rank, PhD; Jorge Rodriguez-Florido, PhD; Ramona Spinka, PhD; Henry Sullivan, PhD; Ferdina J.C. Tort, MA.

Instructors: Constance K. Adelman, MA; Lydia Z. Fernandez, MA; Franco Martinelli, MA.

Lecturers: Ignazio De Bellis, BA (Visiting); Enrique Gallego-Blanco, PhD (Visiting); Dennis G. Nazak, MA.

Major—for the Bachelor of Arts, 45 hours, exclusive of courses in translation, including:

Spanish 218, 219, 221, 222, 223, 224

At least 6 hours of Spanish composition and conversation courses at the 200 level, chosen in consultation with a department adviser.

Majors are encouraged to take electives to complete the 45-hour requirement for the major that will give them a well-rounded background. Specifically, courses should be taken at the advanced level in both Spanish literature and Latin American literature and in advanced language. Courses that deal with cultural aspects should also be considered.

Required Collateral Courses—24 hours, to be chosen in consultation with a department adviser.

Departmental Distinction: The student must complete at least 18 hours in upper-division courses with an average of 4.50 (A=5.00) to be considered for Departmental Distinction.

Minor in Spanish, Italian, or Portuguese

Spanish:
A minimum of 19 hours at the 200 level or above, exclusive of courses in translation. At least 6 hours must be in the 211-216 sequence, and at least 6 additional hours must be in either 221 and 222 or 223 and 224. Courses must be chosen in consultation with the Department of Spanish, Italian, and Poruguese.

Italian:
1. If Italian has not been offered to satisfy the foreign language requirement, a total of 32 hours, including Italian 101-106 and 8 hours of 200-level courses or above in Italian, chosen with the approval of the Department of Spanish, Italian, and Portuguese, or
2. If Italian has been offered to satisfy the foreign language requirement, 20 hours at the 200 level or above, chosen with the approval of the Department of Spanish, Italian, and Portuguese.

Portuguese:
1. If Portuguese has not been offered to satisfy the foreign language requirement, a total of 32 hours, including Portuguese 101-106 and 8 hours of 200-level courses or above in Portuguese, chosen with the approval of the Department of Spanish, Italian, and Portuguese, or
2. If Portuguese has been offered to satisfy the foreign language requirement, 20 hours in Portuguese at the 200 level or above, chosen with the approval of the Department of Spanish, Italian, and Portuguese.

Teacher Education in Spanish: Requirements for Teaching in Secondary Schools

Major—for the Bachelor of Arts, 52 hours including:
Spanish 211, 212, 213, 214, 215,
216, 218, 221, 223, or 224,
231, 232, 252, 253,
280, 281, 349
At least 6 hours at the 300 level (or above, with the consent of the department) in addition to Spanish 349.

Minor—30 hours
Spanish 104, 105, 106,
211, 212, 213,
214, 215, 216

Overseas Program

A significant portion of the credits for the major in Spanish may be earned through the Year Abroad Program conducted at Barcelona, Spain. Students who wish to be considered for this program must arrange to complete Spanish 106 before departure in September. The department strongly recommends Spanish 213, as well as one literature course or the equivalent, before fall departure.

Courses

Italian (Ital)

101. ELEMENTARY ITALIAN I. 4 HOURS. Two additional half hours per week in the language laboratory. For students without credit in Italian. Oral practice, reading, and grammar.

102. ELEMENTARY ITALIAN II. 4 HOURS. Two additional half hours per week in the language laboratory. Continues Italian 101. Prerequisite: Ital 101 or the equivalent.

103. ELEMENTARY ITALIAN III. 4 HOURS. Two additional half hours per week in the language laboratory. Continues Italian 102. Prerequisite: Ital 102 or the equivalent.

104. INTERMEDIATE ITALIAN I. 4 HOURS. Two additional half hours per week in the language laboratory. Rapid reading, grammar review, composition, conversation. Prerequisite: Ital 103 or two years of high school Italian.

105. INTERMEDIATE ITALIAN II. 4 HOURS. Two additional half hours per week in the language laboratory. Continues Italian 104. Prerequisite: Ital 104 or the equivalent.

106. INTERMEDIATE ITALIAN III. 4 HOURS. Two additional half hours per week in the language laboratory. Continues Italian 105. Prerequisite: Ital. 105 or the equivalent.

201. ITALIAN LITERATURE IN ENGLISH TRANSLATION I. 4 HOURS. Same as Humanities 201. Development from its origins to the fifteenth century. Lecture, reading, and discussion of major works. Prerequisite: Sophomore standing or consent of the instructor.

202. ITALIAN LITERATURE IN ENGLISH TRANSLATION II. 4 HOURS. Same as Humanities 202. Development from the sixteenth to the eighteenth centuries. Lecture, reading, and discussion of major works. Prerequisite: Sophomore standing or consent of the instructor.

203. ITALIAN LITERATURE IN ENGLISH TRANSLATION III. 4 HOURS. Same as Humanities 203. Development from the beginning of the nineteenth century to the present. Lecture, reading, and discussion of major works. Prerequisite: Sophomore standing or consent of the instructor.

205. RAPID ITALIAN LANGUAGE FOR SPANISH SPEAKERS I. 4 HOURS. For students with a fluent knowledge of Spanish. Comparative linguistic differences between Spanish and Italian; practice in speaking, reading, and writing. Prerequisite: Native speaker or two 200-level Spanish courses or consent of the instructor.

206. RAPID ITALIAN LANGUAGE FOR SPANISH SPEAKERS II. 4 HOURS. Continues Italian 205. Prerequisite: Ital 205 or the equivalent.

211. INTERMEDIATE COMPOSITION AND CONVERSATION I. 3 HOURS. Practice in oral and written expression based on the study of contemporary Italian material; appropriate grammar review. Prerequisite: Ital 106 or the equivalent.

212. INTERMEDIATE COMPOSITION AND CONVERSATION II. 3 HOURS. Continues Italian 211. Prerequisite: Ital 211.

213. INTERMEDIATE COMPOSITION AND CONVERSATION III. 3 HOURS. Continues Italian 212. Prerequisite: Ital 212.

215. READINGS IN ITALIAN LITERATURE. 4 HOURS. Readings vary from term to term; course may be repeated for credit each term readings change. Introduction to the reading of literary Italian through representative examples of modern drama and fiction. Prerequisite: Ital 106 or consent of the instructor.

220. THE ITALIAN NOVEL OF THE TWENTIETH CENTURY. 4 HOURS. Main currents. Prerequisite: Ital 106 or consent of the instructor.

221. ITALIAN POETRY OF THE TWENTIETH CENTURY. 4 HOURS. Development and nature of modern and contemporary poetry. Prerequisite: Ital 106 or consent of the instructor.

222. CONTEMPORARY ITALIAN DRAMA AND ESSAY. 4 HOURS. Development of drama from Luigi Pirandello to the present. The twentieth-century essay as a literary genre. Prerequisite: Ital 106 or consent of the instructor.

223. INTRODUCTION TO ITALIAN LITERATURE AND CRITICISM. 4 HOURS. Critical techniques in various literary genres and historical perspectives on previous introductory surveys of Italian literature. Prerequisite: Ital 221.

231. ITALIAN CULTURE AND CIVILIZATION. 4 HOURS. Survey of development from earliest times to the present. Prerequisite: Ital 212 or consent of the instructor.

232. ITALIAN CULTURE AND CIVILIZATION II. 4 HOURS. Survey of development from the eighteenth century to the present. Prerequisite: Ital 231 or consent of the instructor.

252. ADVANCED GRAMMAR I. 4 HOURS. Systematic study of syntactic and morphological problems in Italian. May be taken concurrently with Italian 253. Prerequisites: Ital 213 and one 200-level literature course.

253. ADVANCED GRAMMAR II. 4 HOURS. Continues Italian 252. May be taken concurrently with Italian 252. Prerequisites: Ital 213 and one 200-level literature course.

280. TEACHERS COURSE I. 4 HOURS. Required for teacher education majors in Italian. Same as Spanish 280. Various theories and approaches regarding the learning of a second language. Evaluation of current materials and textbooks. Teaching demonstrations in classroom situations. Prerequisites: Junior standing and four 200-level Spanish courses.

281. TEACHERS COURSE II. 4 HOURS. Required for teacher education majors in Italian. Same as Spanish 281. Continues Italian 280. Recent developments in the teaching of Italian; modern foreign language testing, use of audiovisual media, operation of a language laboratory, preparation of audio and video tapes. Prerequisite: Ital 280 or consent of the instructor.

291. SENIOR THESIS. 2 HOURS. May be repeated for a maximum of 6 hours. For candidates for honors in Italian. Prerequisite: Honors status.

299. INDEPENDENT STUDY. 1 TO 6 HOURS. Open only to qualified students majoring in a Romance language. Prerequisites: Proficiency in Italian and approval of the department.

305. ITALIAN LITERARY MOVEMENTS TO 1450. 4 HOURS. Major developments. Prerequisite: Two 200-level courses in Italian or consent of the instructor.

306. ITALIAN LITERARY MOVEMENTS FROM 1450 TO 1600. 4 HOURS. Continues Italian 305. Prerequisite: Two 200-level courses in Italian or consent of the instructor.

307. ITALIAN LITERAURE FROM 1600 TO 1800. 4 HOURS. Continues Italian 306. Prerequisite: Two 200-level courses in Italian or consent of the instructor.

308. ITALIAN LITERATURE FROM 1800 TO THE PRESENT. 4 HOURS. Continues Italian 307. Prerequisite: Two 200-level courses in Italian or consent of the instructor.

349. PHONETICS. 4 HOURS. Prerequisite: Any 200-level literature course.

399. INDEPENDENT STUDY. 1 TO 6 HOURS. May be repeated for credit. For seniors and graduate students. Independent research on various aspects of Italian culture and studies not covered in regular courses. Prerequisite: Consent of the instructor.

Portuguese (Port)

100. INTENSIVE ELEMENTARY PORTUGUESE. 8 HOURS. Two additional hours per day in the language laboratory. Special accelerated course, equivalent to Portuguese 101 and 102 combined.

101. ELEMENTARY PORTUGUESE I. 4 HOURS. Two additional half hours per week in the language laboratory. For students without credit in Portuguese. Oral practice, reading, and grammar.

102. ELEMENTARY PORTUGUESE II. 4 HOURS. Two additional half hours per week in the language laboratory. Continues Portuguese 101. Prerequisite: Port 101 or the equivalent.

103. ELEMENTARY PORTUGUESE III. 4 HOURS. Two additional half hours per week in the language laboratory. Continues Portuguese 102. Prerequisite: Port 102 or the equivalent.

104. INTERMEDIATE PORTUGUESE I. 4 HOURS. Two additional half hours per week in the language laboratory. Rapid reading, grammar review, composition, conversation. Prerequisite: Port 103 or two years of high school Portuguese.

105. INTERMEDIATE PORTUGUESE II. 4 HOURS. Two additional half hours per week in the language laboratory. Continues Portuguese 104. Prerequisite: Port 104 or the equivalent.

106. INTERMEDIATE PORTUGUESE III. 4 HOURS. Two additional half hours per week in the language laboratory. Continues Portuguese 105. Prerequisite: Port 105 or the equivalent.

110. INTENSIVE ELEMENTARY/INTERMEDIATE PORTUGUESE. 8 HOURS. Two additional hours per week in the language laboratory. Continues Portuguese 100. Special accelerated course, equivalent to Portuguese 103 and 104 combined. Prerequisite: Port 100 or 102 or the equivalent.

120. INTENSIVE INTERMEDIATE PORTUGUESE. 8 HOURS. Two additional hours per week in the language laboratory. Continues Portuguese 110. Special accelerated course, equivalent to Portuguese 105 and 106 combined. Prerequisite: Port 110 or 104 or the equivalent.

170. MASTERPIECES OF LUSO-BRAZILIAN LITERATURE IN ENGLISH TRANSLATION. 4 HOURS. May be repeated for credit each term topics change. Same as Humanities 170 and Latin American Studies 170. Representative works with background material.

171. READINGS IN LUSO-BRAZILIAN LITERATURE IN ENGLISH TRANSLATION. 4 HOURS. May be repeated for credit each term topics change. Same as Humanities 171 and and Latin American Studies 171. Selected topics.

172. PORTUGUESE LITERATURE IN ENGLISH TRANSLATION. 4 HOURS. Same as Humanities 172. Introduction to the Portuguese literary tradition. Reading and discussion of major literary movements, individual works, and such literary figures as Gil Vicente, Camoes, Eca de Queiroz, and Fernando Pessoa. Prerequisites: Port 170 and 171 or consent of the instructor.

201. RAPID PORTUGUESE FOR SPEAKERS OF SPANISH. 4 HOURS. Same as Latin American Studies 201. For students with a fluent knowledge of Spanish. Concentration on the comparative linguistic differences between Spanish and Portuguese and practice in speaking, reading, and writing. Prerequisites: Native Spanish and two 200-level Spanish courses or consent of the instructor.

202. PORTUGUESE COMPOSITION AND CONVERSATION. 4 HOURS. May be repeated for a maximum of 12 hours of credit. Same as Latin American

Studies 202. Practice in writing and speaking. Prerequisite: Port 106 or 120 or 201 or consent of the instructor.

205. PORTUGUESE LITERATURE I. 4 HOURS. Survey to 1800. Prerequisite: Two years of Portuguese or the equivalent or consent of the instructor.

206. PORTUGUESE LITERATURE II. 4 HOURS. Survey from 1800 to the present. Prerequisite: Port 205 or consent of the instructor.

215. BRAZILIAN LITERATURE I. 4 HOURS. Survey through Romanticism. Prerequisite: Two years of Portuguese or the equivalent or consent of the instructor.

216. BRAZILIAN LITERATURE II. 4 HOURS. Survey from realism and naturalism to the present. Prerequisite: Port 215 or consent of the instructor.

217. LUSO-BRAZILIAN CULTURE I. 4 HOURS. Readings and discussions in Portuguese and English related to an understanding of "a realidade brasileira." Prerequisite: Port 219 or consent of the instructor.

218. LUSO-BRAZILIAN CULTURE II. 4 HOURS. Continues Portuguese 217. Prerequisite: Port 217 or consent of the instructor.

269. TOPICS IN LUSO-BRAZILIAN STUDIES. 4 HOURS. May be repeated for credit. Same as Latin American Studies 269. Literature, linguistics, and culture. Prerequisite: Consent of the instructor.

299. INDEPENDENT STUDY. 1 TO 6 HOURS. May be repeated for credit. Open to qualified students interested in Luso-Brazilian studies. Prerequisites: Proficiency in Portuguese and approval of the department.

315. ADVANCED TOPICS IN BRAZILIAN LITERATURE. 4 HOURS. May be repeated for credit. Same as Latin American Studies 315. Topics related to various aspects of Brazilian literary history and Brazilian writers. Topics vary from term to term. Prerequisite: Port 215 or consent of the instructor.

390. TOPICS IN LUSO-BRAZILIAN LITERATURE. 4 HOURS. May be repeated for credit. Same as Latin American Studies 390. Topics related to various aspects of the Luso-Brazilian language, literature, and culture. Topics vary from term to term. Prerequisite: Consent of the instructor.

399. INDEPENDENT STUDY. 1 TO 6 HOURS. May be repeated for credit. Intended for graduate students who wish to do independent research on various aspects of Luso-Brazilian studies. Prerequisite: Consent of the instructor.

Spanish (Span)

100. INTENSIVE ELEMENTARY SPANISH. 8 HOURS. Two additional hours per day in the language laboratory. Special accelerated course, equivalent to Spanish 101 and 102 combined.

101. ELEMENTARY SPANISH I. 4 HOURS. Two additional half hours per week in the language laboratory. For students without credit in Spanish. Oral practice, reading, and grammar.

102. ELEMENTARY SPANISH II. 4 HOURS. Two additional half hours per week in the language laboratory. Continues Spanish 101. Prerequisite: Span 101 or the equivalent.

103. ELEMENTARY SPANISH III. 4 HOURS. Two additional half hours per week in the language laboratory. Continues Spanish 102. Prerequisite: Span 102 or the equivalent.

104. INTERMEDIATE SPANISH I. 4 HOURS. Two additional half hours per week in the language laboratory. Rapid reading, grammar review, composition, conversation. Prerequisite: Span 103 or two years of high school Spanish.

105. INTERMEDIATE SPANISH II. 4 HOURS. Continues Spanish 104. Prerequisite: Span 104 or the equivalent.

106. INTERMEDIATE SPANISH III. 4 HOURS. Continues Spanish 105. Prerequisite: Span 105 or the equivalent.

110. INTENSIVE ELEMENTARY/INTERMEDIATE SPANISH. 8 HOURS. Two additional hours per week in the language laboratory. Continues Spanish 100. Special accelerated course, equivalent to Spanish 103 and 104 combined. Prerequisite: Span 100 or 102 or the equivalent.

115. ELEMENTARY COMPOSITION AND CONVERSATION. 2 HOURS. Difficulty level: Spanish 104 through 106. May be taken concurrently with Spanish 105 or 106. Does not count toward the major in Spanish. Prerequisite: Span 104 or two years of high school Spanish.

120. INTENSIVE INTERMEDIATE SPANISH. 8 HOURS. Two additional hours per week in the language laboratory. Continues Spanish 110. Special accelerated course, equivalent to Spanish 105 and 106 combined. Prerequisite: Span 110 or 104 or the equivalent.

150. ACCELERATED SPANISH. 12 HOURS. For students with demonstrated linguistic aptitude who have earned an A or a B in Spanish 102 or 100. An intensive term of Spanish to reach the 106 standard and satisfy the language requirement. Normally students should take only one other 4-hour course during the term. Prerequisite: Span 102 or 100.

187. MASTERPIECES OF SPANISH LITERATURE IN ENGLISH TRANSLATION. 4 HOURS. Not open to Spanish majors. Same as Humanities 187.

199. ALTERNATE COURSE IN SPANISH. 1 TO 12 HOURS. May be repeated for up to 12 hours of credit. Speical remedial course: rapid revision and particular skill development, such as in reading, writing, and speaking; special cases involving learning difficulties.

211. INTERMEDIATE COMPOSITION AND CONVERSATION I. 3 HOURS. Prerequisite: Span 106 or four years of high school Spanish.

212. INTERMEDIATE COMPOSITION AND CONVERSATION II. 3 HOURS. Continues Spanish 211. Prerequisite: Span 211 or the equivalent.

213. INTERMEDIATE COMPOSITION AND CONVERSATION III. 3 HOURS. Continues Spanish 212. Prerequisite: Span 212 or the equivalent.

214. ADVANCED COMPOSITION AND CONVERSATION I. 3 HOURS. Prerequisite: Span 213 or the equivalent.

215. ADVANCED COMPOSITION AND CONVERSATION II. 3 HOURS. Continues Spanish 214. Prerequisite: Span 214 or the equivalent.

216. ADVANCED COMPOSITION AND CONVERSATION III. 3 HOURS. Continues Spanish 215. Prerequisite: Span 215 or the equivalent.

217. SPOKEN SPANISH. 3 HOURS. Intensive course. Exclusively oral-aural. Prerequisite: Span 213 or the equivalent.

218. SPANISH LITERATURE TO 1700. 4 HOURS. Highlights of Spanish literature from its beginning through the seventeenth century. Prerequisite: Span 106 or the equivalent.

219. SPANISH LITERATURE FROM 1700 TO 1900. 4 HOURS. Continues Spanish 218. Prerequisite: Span 106.

221. SPANISH LITERATURE OF THE TWENTIETH CENTURY. 4 HOURS. Continues Spanish 219. Highlights. Prerequisite: Span 106 or the equivalent.

222. INTRODUCTION TO SPANISH LITERATURE AND CRITICISM. 4 HOURS. Required for Spanish majors. Critical techniques in various literary genres and an historical perspective on the previous three-term introductory survey of Spanish literature. Prerequisite: Span 221.

223. SPANISH-AMERICAN FICTION OF THE TWENTIETH CENTURY I. 4 HOURS. Same as Latin American Studies 223. Readings in contemporary Spanish-American novelists and short story writers. Prerequisite: Span 106 or 120 or four years of high school Spanish or the equivalent.

224. SPANISH-AMERICAN FICTION OF THE TWENTIETH CENTURY II. 4 HOURS. Same as Latin American Studies 224. Continues Spanish 223. Prerequisite: Span 223.

227. THE SPANISH-AMERICAN SHORT STORY. 4 HOURS. Historical and critical study of the development of the short story from the period of Independence to the present. Prerequisite: Span 223 or 224.

231. HISPANIC CULTURE: SPAIN. 4 HOURS. Required for teacher education majors in Spanish. The cultural aspects of Spanish civilization. Prerequisite: Any 200-level literature course or consent of the instructor.

232. HISPANIC-AMERICAN CULTURE. 4 HOURS. Same as Latin American Studies 232. Required for teacher education majors in Spanish. The cultural aspects of Spanish-American civilization. Prerequisite: Any 200-level literature course or consent of the instructor.

240. SPANISH LITERATURE IN TRANSLATION I. 4 HOURS. Not open to Spanish majors or minors or to students who have credit in courses above Spanish 200. Same as Humanities 240. Major works from the *Cid* to the end of the nineteenth century. Prerequisite: Sophomore standing or consent of the instructor.

241. SPANISH LITERATURE IN TRANSLATION II. 4 HOURS. Not open to Spanish majors or minors or to students who have credit in courses above Spanish 200. Same as Humanities 241. Major works from 1898 to the present. Prerequisite: Sophomore standing or consent of the instructor.

242. SPANISH-AMERICAN LITERATURE IN TRANSLATION. 4 HOURS. Not open to Spanish majors or minors or to anyone with credit in Spanish courses above the 200 level. Same as Humanities 242. Major works from the beginning to the present; special emphasis on the nineteenth and, particularly, the twentieth centuries. Prerequisite: Sophomore standing or consent of the instructor.

252. ADVANCED GRAMMAR. 4 HOURS. Required for teacher education majors in Spanish. Systematic study of syntactic and morphological problems. Prerequisites: Span 213 and any 200-level literature course.

253. ADVANCED GRAMMAR. 4 HOURS. Required for teacher education majors in Spanish. Continues Spanish 252. May be taken concurrently with Spanish 252. Prerequisites: Span 213 and any 200-level literature course.

270. EDUCATIONAL PRACTICE WITH SEMINAR I. 8 HOURS. Same as Education 270. The first half of a two-segment sequence of practice teaching, including seminar, to meet certification requirements for teaching in the elementary or secondary school. Prerequisites: Ed 250, admission to advanced standing, and recommendation of the department of specialization.

271. EDUCATIONAL PRACTICE WITH SEMINAR II. 8 HOURS. Same as Education 271. The second half of a two-segment sequence of practice teaching, including seminar, to meet certification requirements for teaching in the elementary or secondary school. Prerequisites: Ed 250, credit or concurrent registration in Span 270, admission to or continuation of advanced standing, and recommendation of the department of specialization.

280. TEACHERS COURSE I. 4 HOURS. Required for teacher education majors in Spanish. Same as Italian 280. Various theories and approaches regarding the learning of a second language. Evaluation of current materials and textbooks. Teaching demonstrations in classroom situations. Prerequisites: Junior standing and four 200-level Spanish courses.

281. TEACHERS COURSE II. 4 HOURS. Required for teacher education majors in Spanish. Same as Italian 281. Continues Spanish 280. Recent developments in the teaching of Spanish; modern foreign language testing, use of audiovisual media, operation of a language laboratory, preparation of audio and video tapes. Prerequisite: Span 280 or consent of the instructor.

291. SENIOR THESIS. 2 HOURS. May be repeated for a maximum of 6 hours. For candidates for honors in Spanish. Prerequisite: Honors status.

299. INDEPENDENT STUDY. 1 TO 6 HOURS. Open only to Spanish majors. Prerequisite: Consent of the instuctor.

301. CONTEMPORARY SPANISH POETRY. 4 HOURS. From modernism to the present. Readings and interpretation of the works of some of the best known poets of the period. Prerequisite: Span 219 or 221.

302. CONTEMPORARY SPANISH THEATER. 4 HOURS. Plays of some of the best known contemporary authors, from Benavente to Sastre. Prerequisite: Span 219 or 221.

303. NINETEENTH-CENTURY SPANISH NON-ROMANTIC DRAMA. 4 HOURS. Representative outlines of non-Romantic plays, their characteristics and development. Prerequisite: Span 219 or 221.

305. SPANISH ROMANTICISM. 4 HOURS. Representative works of the Romantic period; pa ıcular emphasis on Romantic drama and poetry. Prerequisite: Span 219 or 22

306. REALISM IN NINETEENTH-CENTURY SPANISH LITERATURE. 4 HOURS. Continues Spanish 305. Prerequisite: Span 219 or 221.

307. THE GENERATION OF 1898. 4 HOURS. Representative works of Baroja, Azorin, Unamuno, Maeztu, Valle Inclan, Benavente, A. Machado, and others. Prerequisite: Span 219 or 221.

308. SPANISH-AMERICAN LITERATURE TO 1888 I. 4 HOURS. Same as Latin American Studies 308. Development from the sixteenth century through the end of the Romantic period. Prerequisite: Span 223 or 224 or the equivalent.

309. SPANISH-AMERICAN LITERATURE TO 1888 II. 4 HOURS. Same as Latin American Studies 309. Continues Spanish 308. Prerequisite: Span 223 or 224.

310. *MODERNISMO* AND CONTEMPORARY SPANISH-AMERICAN POETRY I. 4 HOURS. Same as Latin American Studies 310. Spanish-American poetry from 1888 to the present, with some *Modernista* prose. Prerequisite: Span 223 or 224.

311. *MODERNISMO* AND CONTEMPORARY SPANISH-AMERICAN POETRY II. 4 HOURS. Same as Latin American Studies 311. Continues Spanish 310. Prerequisite: Span 223 or 224.

314. POETRY OF THE GOLDEN AGE. 4 HOURS. Development of Spanish lyric poetry out of both popular and classical sources. *Romances,* Renaissance poetry, mystic poetry, *culteranismo,* and *conceptismo.* Prerequisite: Span 218.

315. DRAMA OF THE GOLDEN AGE. 4 HOURS. Development of Spanish theater in the Golden Age; detailed study of plays by Lope de Vega, Tirso de Molina, Calderon, and other representative dramatists. Prerequisite: Span 218.

316. THE SPANISH PICARESQUE NOVEL. 4 HOURS. The major Spanish works in the picaresque tradition; emphasis on the origins of this literary development and the changes it underwent during the one hundred years of its flowering. Prerequisite: Span 218.

317. PROSE OF THE GOLDEN AGE. 4 HOURS. Major examples of picaresque, pastoral, and chivalric forms. Prerequisite: Span 218.

318. MINOR WORKS OF CERVANTES. 4 HOURS. The prose of Cervantes and its relationship to his masterpiece. Prerequisite: Span 218.

319. *DON QUIJOTE.* 4 HOURS. Same as Humanities 319. Reading and discussion; emphasis on novelistic technique and the development of the novel. Prerequisite: Junior standing.

320. THE CONTEMPORARY SPANISH NOVEL I. 4 HOURS. Development since 1936. Prerequisite: Span 219 or 221.

321. THE CONTEMPORARY SPANISH NOVEL II. 4 HOURS. Continues Spanish 320. Prerequisite: Span 219 or 221.

322. REGIONALISM AND POPULARISM IN THE SPANISH NOVEL. 4 HOURS. Origins, development, characteristics, and significance of regionalism-

popularism in Spanish literature and its relation to Spanish regions. Prerequisite: Span 219.

323. THE CONTEMPORARY SPANISH-AMERICAN NOVEL I. 4 HOURS. Same as Latin American Studies 323. From the Romantic period to 1930. Prerequisite: Span 223 or 224 or the equivalent.

324. THE CONTEMPORARY SPANISH-AMERICAN NOVEL II. 4 HOURS. Same as Latin American Studies 324. Continues Spanish 323. From 1930 to the present. Prerequisite: Span 223 or 224.

330. SPANISH-AMERICAN THEATER. 4 HOURS. Same as Latin American Studies 330. Historical and critical study of the development of Spanish-American theater from its beginning to the present. Prerequisite: Span 223 or 224.

333. GAUCHO LITERATURE. 4 HOURS. Same as Latin American Studies 333. Survey of novels, poetry, and short stories relating to the gaucho. Prerequisite: Span 224.

334. THE NOVEL OF THE MEXICAN REVOLUTION. 4 HOURS. Same as Latin American Studies 334. The major works of Mariano Azuela, Martin Luis Guzman, Jose Ruben Romero, and other writers of fiction. Prerequisite: Span 224.

335. THE INDIGENIST NOVEL IN LATIN AMERICA. 4 HOURS. Same as Latin American Studies 335. Survey of one of the important developments in the Latin American social novel; emphasis on the novel of the Andean region (Peru, Bolivia, and Ecuador). Prerequisite: Span 224.

336. EXPERIMENTAL SPANISH-AMERICAN FICTION. 4 HOURS. Same as Latin American Studies 336. Contemporary fiction; emphasis on the latest developments in the novel and short story. Prerequisite: Span 224.

340. HISTORY OF THE SPANISH LANGUAGE. 4 HOURS. General survey of the development of the Spanish language. Prerequisite: Consent of the instructor.

341. STUDIES IN PENINSULAR LANGUAGES. 4 HOURS. May be repeated for credit. Dialects and languages of the Iberian Peninsula, including Catalan, Galician, Aragonese, Leonese. Topic varies from term to term. Prerequisite: Span 340 or an equivalent course in any Romance language or approval of the department.

342. INTRODUCTION TO ROMANCE PHILOLOGY. 4 HOURS. History of the Romance languages, especially Spanish, French, Italian, and Portuguese, from the classical Latin period to the present; their external history, phonology, morphology, and syntax. Prerequisite: Consent of the instructor.

345. MEDIEVAL SPANISH LITERATURE I. 4 HOURS. Important works from the beginnings to 1400. Prerequisite: Span 218. Spanish 340 is recommended.

346. MEDIEVAL SPANISH LITERATURE II. 4 HOURS. Important works of the fifteenth century. Prerequisite: Span 218. Spanish 340 is recommended.

349. PHONETICS. 4 HOURS. Prerequisites: Span 213 and 218 or 221.

361. SPANISH ABROAD. 0 TO 15 HOURS. May be repeated for credit for a maximum of 45 hours. Lectures, seminars, and practical work in Spain. Spanish

language, literature, and civilization. Prerequisites: Span 214 or the equivalent; Span 218, 219 or the equivalents; 3.50 overall average; 4.00 average in Spanish courses.

371. SPANISH FOR TEACHERS. 4 HOURS. Consideration of those language problems suggested by teaching experience. It is recommended that this course be taken after student teaching, in the last term before graduation. Also open to experienced teachers. Prerequisite: Student teaching or professional teaching experience.

375. FOREIGN LANGUAGE COMPUTER-ASSISTED INSTRUCTION. 4 HOURS. Same as French 385, German 340, and Slavic Languages and Literatures 340. Does not count toward the major. Basic introduction to the use of the TUTOR language and PLATO IV system in foreign language instruction. Each student designs and implements an instructional module as a term project. Prerequisite: Completion of the intermediate level, or the equivalent, of either Spanish, French, German, or a Slavic language.

390. TOPICS IN SPANISH LITERATURE. 4 HOURS. May be repeated. Topics vary from term to term. Prerequisite: Consent of the instructor.

399. INDEPENDENT STUDY. 1 TO 6 HOURS. Supervised study, in an area not covered by regularly offered courses, under the direction of a faculty member designated by the department on the request of a qualified student. Individual conferences, assigned readings and papers, and other work are required. Prerequisites: Spanish major with senior standing or graduate student in Spanish and approval of the department.

Speech and Theater

Professors: R. Victor Harnack, PhD, Head of the Department; Donald H. Dickinson, PhD; Grace Holt, MA; Thomas Kochman, PhD; Chester C. Long, PhD; Carl A. Pitt, PhD (Emeritus); Harry J. Skornia, PhD (Emeritus).

Associate Professors: Katharine T. Loesch, PhD; Natalie Schmitt, PhD; Barbara S. Wood, PhD.

Assistant Professors: George Caldwell, PhD; Julia M. Curry, MS; John Dimmick, PhD; Dan Doeden, PhD; Harriet Harral, PhD; Conde R. Hoskins, MA; Helen J. Hovde, MA; John A. Jones, PhD; Theodore V. Kundrat, MA; William F. Raffeld, MA; Joel Sternberg, PhD.

Instructors: Janice M. Crews, MA (Emeritus).

Lecturers: Robert Mills, MA.

Major—for the Bachelor of Arts, 44 hours, exclusive of Speech 100, 101, and 141. At least 24 hours must be at the 200 or 300 level, and all major programs must include Speech 201 or 202. Majors must demonstrate proficiency in public speaking and oral reading at the Speech 101 and 141 levels.

Majors elect one of three programs: *Communications and Public Address, Theater and Oral Interpretation,* or *Mass Media.* Consult the department office for examples of programs in these areas. Choices are made in consultation with a department adviser.

Departmental Distinction: A candidate must have a cumulative grade point average of 4.00 (A=5.00) and a grade of B in Speech 298; with High Distinction, either a cumulative grade point average of 4.00 and a grade of A in Speech 298 or a cumulative grade point average of 4.25 and a grade of B in Speech 298; with Highest Distinction, a cumulative grade point average of 4.25 and a grade of A in Speech 298.

Minor—At least 28 hours, chosen in consultation with an adviser in the Department of Speech and Theater. At least 12 of the 28 must be at the 200 or 300 level.

Teacher Education in Speech: Requirements for Teaching in Secondary Schools

Communications and Public Address:

Major—for the Bachelor of Arts, 48 hours
Speech 101 or 102, 141, or proficiency[1]
111, 112, 113
121, 122, 123, 201 or 202
211, 212, 213, 295

Minor—30 hours
Speech 101, 141, or proficiency[1]
111, 112, 113, 201 or 202
211 or 212 or 213

Theater and Oral Interpretation:

Major—for the Bachelor of Arts, 48 hours
101 or 102, 141, or proficiency[1]
111 and 112 or 113
121, 122, 123, 151
201 or 202, 211 or 212 or 213
241, 261, 264, 295
Electives: 0-22 hours

Minor—30 hours
101, 141, or proficiency[1]
121, 122, 123, 151
201 or 202, 241, 264

Courses (Spch)

100. STRATEGIES FOR PUBLIC SPEAKING. 3 HOURS. Effective approaches to audience analysis, speaker credibility, message organization, uses of evidence, development and evaluation of arguments, body language, persuasion, and conflict resolution. Participation in small group exercises.

101. EFFECTIVE SPEAKING. 2 HOURS. Application of the principles of effective speechmaking. Practice in the preparation and presentation of short speeches. Prerequisite: Spch 100.

102. PRINCIPLES OF EFFECTIVE SPEAKING. 4 HOURS. Prerequisite: James Scholar or Dean's List status or speech major or approval of the department.

107. PARLIAMENTARY PROCEDURE. 2 HOURS. Principles and practice.

1. If the student demonstrates proficiency in Speech 101 and 141 by department examination, additional hours must be taken to achieve the 48-hour requirement for the major and the 30-hour minimum requirement for the minor.

111. FOUNDATIONS OF COMMUNICATION THEORY. 4 HOURS. The development of communication theory from Plato and Aristotle to the twentieth century. Consideration of concepts, including relationships between societal needs and communication theory, free speech, development of parliamentary institutions, and fundamental communication principles.

112. INTERPERSONAL COMMUNICATION THEORY. 4 HOURS. Cognitive, linguistic, and physical processes in communication. Communication models, cognitive dissonance, language behavior, feedback and channels.

113. MASS COMMUNICATION THEORY. 4 HOURS. The nature of mass communications; particular consideration of major concepts, including communication technology and societal change, information transmission and diffusion, content analysis and the measurement of effects, the institutionalization of mass communications, freedom and responsibility in public and private channels, and the relationship of mass communications to mass culture.

121. INTRODUCTION TO THE THEATER. 4 HOURS. The nature and elements of theater—the theories, styles, and semantics of theater arts. Attendance at three specified plays is required.

122. SURVEY OF THEATER HISTORY. 4 HOURS. Introduction to the major historical periods of the development of the theater and drama from ancient Greece to the present. Prerequisite: Spch 121.

123. CONTEMPORARY THEATER. 4 HOURS. Critical and analytical study of current theater productions based on modern literary, production, and performance standards. Students attend and analyze several plays in the Chicago area. Prerequisite: Spch 121.

131. SURVEY OF CONTEMPORARY BROADCASTING. 4 HOURS. Introduction to the history, structure, operation, and impact of American broadcasting and its relation to other media and institutions in our society.

141. ORAL INTERPRETATION OF LITERATURE. 4 HOURS. Oral reading for understanding, appreciation, and communication.

151. INTRODUCTION TO TECHNICAL THEATER. 4 HOURS. A lecture-laboratory approach to the basic techniques of play production. Survey of historical background and sources, theories, styles, methods and materials of scene design, stage lighting, costuming, and makeup. Lectures, readings, and practical problems. Prerequisite: Spch 121.

171. PRINCIPLES OF CHILDREN'S LANGUAGE ACQUISITION AND SPEECH DEVELOPMENT. 4 HOURS. Introduction to the development, role, and structure of speech and language. Designed to assist the elementary school teacher in identifying and recognizing speech and language development phenomena, including speech and language pathology.

191. SPEECH VARIATION IN URBAN AREAS I. 4 HOURS. An introductory course; basic linguistic principles and their application to the study of regional, social, and cultural speech differences in the United States. Introduction to Jewish, Polish, southern mountain white, Bridgeport Irish, Native American, and Black varieties of speech.

192. SPEECH VARIATION IN URBAN AREAS II. 4 HOURS. A comparative approach to the similarities and differences in the functions of speech within the populations introduced in Speech and Theater 191. The functional perspective

integrates speech patterns, rules of appropriateness, attitudinal factors, selective pressure, selective adaptation, and functional value in situational contexts. Prerequisite: Spch 191.

195. TRAINING THE SPEAKING VOICE. 3 HOURS. Designed to develop in the individual student's voice a wide range of control in pitch, volume, and quality to meet extraordinary voice and speech demands in broadcasting, interpretation, public address, teaching, and theater.

201. BASES OF SPEECH. 4 HOURS. The social, physical, physiological, neurological, phonetic, linguistic, psychological, genetic, and semantic bases of speech.

202. FUNDAMENTALS OF PHONETICS. 4 HOURS. Phonemics and phonetics; emphasis on pronunciation characteristics of American English, ear training, and practice in transcription.

203. ANATOMY AND PHYSIOLOGY OF THE SPEECH MECHANISM. 4 HOURS. Anatomical and physiological characteristics of the normal speech-and-hearing mechanisms; physiology of speech production. Prerequisite: Spch 201 or 202 or consent of the instructor.

204. SPEECH SCIENCE. 4 HOURS. Voice and speech as related to the physiology of the speech act, acoustics, and the hearing of speech. Prerequisite: Spch 201 or 202 or consent of the instructor.

210. STATISTICS IN COMMUNICATION RESEARCH. 4 HOURS. Credit is not given for Speech and Theater 210 if the student has credit in Quantitative Methods 171, Sociology 185, Geography 185, or Psychology 243. The role of statistics in communication research; the nature of research design; the basic concepts of measurement scales, distributions, parameters, hypothesis testing; methods of assessing differences; methods of assessing relationships. Examples are drawn from communication research. Prerequisites: Spch 112 and 113 or consent of the instructor.

211. DISCUSSION. 4 HOURS. Study and practice in the theories and techniques of group discussion; the nature of small-group decision-making; discussion as a learning technique. Prerequisite: Spch 112.

212. ARGUMENTATION. 4 HOURS. The theory of argumentation; evidence, reasoning, and refutation; historical and contemporary debates and argumentative discourse; practice in argumentative speaking.

213. PERSUASION. 4 HOURS. Principles of attitude change, including theories of persuasion and audience analysis. Practice and experimentation in persuasive speaking. Prerequisites: Spch 111, 112, and 113 or Spch 215 or consent of the instructor.

215. PSYCHOLOGY OF ATTITUDE AND OPINION. 5 HOURS. Same as Psychology 215. Survey of behavioral approaches to the measurement of social attitudes and opinions; determinants and correlates of public attitudes and opinions. Lecture and participation in field and laboratory studies. Prerequisite: 8 hours of psychology or consent of the instructor for well-qualified speech majors.

227. PLAYWRITING. 4 HOURS. An introductory course in the writing of drama as a distinctive mode of expression intended for theatrical performance. The nature of the theatrical experience and dramatic action through the basic elements

of plot, character, theme, dialog, mood, and spectacle. Specific writing exercises and satisfactory completion of an original one-act play. Prerequisites: Junior standing and Spch 122 and 123 or consent of the instructor.

231. TELEVISION AND RADIO PERFORMANCE. 4 HOURS. Development of the basic skills for effective dramatic and nondramatic television and radio performance; announcing, interviewing, and acting. Special attention to individual performance problems. Lecture and laboratory. Prerequisite: Spch 113 or consent of the instructor.

232. TELEVISION AND RADIO PRODUCTION. 4 HOURS. Lecture and laboratory course on advanced production techniques. Students are exposed to a variety of radio and television situations. Prerequisite: Spch 131 or consent of the instructor.

233. TELEVISION AND RADIO DIRECTING. 4 HOURS. Development of style and skill; special attention to script analysis, staging, pictorial composition, audio placement and integration, control room operation, crew management, and rehearsal procedures. Prerequisite: Spch 232.

239. MASS COMMUNICATION PRACTICUM. 5 HOURS. Professional studies in the mass media. Students work in Chicago-area radio and television stations. The nature of the work is determined in consultation with the department and the station involved. Limited to a few advanced students in mass communications on the basis of written applications submitted one term in advance. Prerequisite: Consent of the head of the department.

241. ADVANCED ORAL INTERPRETATION. 4 HOURS. Literary analysis of poetry, prose, and drama; platform presentation of literary materials. Prerequisite: Spch 141.

251. ADVANCED TECHNICAL THEATER. 4 HOURS. Advanced techniques of play production. Fundamentals of scene design, lighting, and costuming, such as illusion techniques, ornamentation, use of color; techniques of rendering, plotting, and sketching. Practical work with the University Theater. Prerequisite: Spch 151.

261. FUNDAMENTALS OF ACTING. 4 HOURS. Methods of acting; emphasis on basic stage techniques and the role of the character in relation to the intellectual and emotional values of the play. Prerequisites: Spch 121 and 141 or consent of the instructor.

262. ADVANCED ACTING. 4 HOURS. Study and practice of modern realistic and nonrealistic acting techniques. Development and performance of a full-length characterization. Prerequisite: Spch 261 or consent of the instructor.

264. FUNDAMENTALS OF STAGE DIRECTING. 4 HOURS. Principles and techniques. Fundamentals of staging: blocking, movement, business, tempo; script analysis and rehearsal planning. Specific projects in directing scenes. Prerequisites: Spch 121 and 261.

265. ADVANCED STAGE DIRECTION. 4 HOURS. Procedures for developing a creative relationship between director and actor in interpreting a play in rehearsal; historical consideration of directional methods. Class analysis of problems of interpretation and stage management; assignment of scenes to demonstrate dramatic values. Prerequisite: Spch 264.

268. PRACTICUM IN THEATER AND ORAL INTERPRETATION. 1 TO 6 HOURS. May be repeated for credit up to a maximum of 36 hours. No more than 8 hours may be applied to the minimum requirements for a major in speech and theater. Planning and execution of specific topics in acting, oral interpretation, stage management, or technical work directly contributing to major or studio productions of the department. The approval and supervision of the director and the technical director are required. Prerequisites: Spch 121, 151, and consent of the instructor.

270. EDUCATIONAL PRACTICE WITH SEMINAR I. 8 HOURS. Same as Education 270. The first half of a two-segment sequence of practice teaching, including seminar, to meet certification requirements for teaching in the elementary or secondary school. Prerequisites: Ed 250, admission to advanced standing, and recommendation of the department of specialization.

271. EDUCATIONAL PRACTICE WITH SEMINAR II. 8 HOURS. Same as Education 271. The second half of a two-segment sequence of practice teaching, including seminar, to meet certification requirements for teaching in the elementary or secondary school. Prerequisites: Ed 250, credit or concurrent registration in Spch 270, admission to or continuation of advanced standing, and recommendation of the department of specialization.

295. SECONDARY SCHOOL SPEECH CURRICULUM. 4 HOURS. The objectives, principles, and methods of teaching speech arts in the secondary school. Prerequisites: Junior standing and 16 hours of speech courses.

298. HONORS COURSE: INDIVIDUAL STUDY. 3 HOURS. May be repeated for a maximum of 6 hours. Individual study leading to a thesis to complete requirements for distinction in the Department of Speech and Theater. Prerequisites: 24 hours of speech and theater, 4.00 grade point average, and consent of the head of the department.

299. INDIVIDUAL TOPICS. 3 HOURS. May be repeated for a maximum of 6 hours. Individual investigation of special problems. Prerequisites: 10 hours of speech and theater, 3.75 grade point average, and consent of the head of the department.

301. COMMUNICATION ANALYSIS. 4 HOURS. Descriptions, models, proposed dimensions, and statistical treatment of the communication process. Prerequisites: Spch 112, 113, 201 or 202 and 210 or consent of the instructor.

302. GROUP COMMUNICATION THEORY. 4 HOURS. Detailed analysis and observation of group processes from the viewpoint of modern information and field communication theory. Prerequisites: Spch 111, 112, 113, 210, and 211 or consent of the instructor.

303. THEORIES OF LANGUAGE PERFORMANCE. 4 HOURS. Contemporary theories and related research in language performance, centering on selected approaches to language acquisition and behavior; special emphasis on the psycholinguistic approach. Prerequisites: Spch 112, 201 or 202, and 210 or the equivalents or sufficient language-linguistics background.

308. LINGUISTIC PHONETICS. 4 HOURS. Same as Linguistics 312. The relationship of articulatory, acoustic, and auditory phonetics to the study of language. Prerequisite: Ling 310, or junior standing and consent of the instructor.

309. EXPERIMENTAL PHONETICS. 4 HOURS. Same as Linguistics 314. Contributions of instrumental techniques and experimental design to the study of

phonetics. Prerequisite: Ling 310, or junior standing and consent of the instructor.

311. AMERICAN AND BRITISH PUBLIC ADDRESS I. 4 HOURS. Critical and historical study of American and British speakers and their speeches to 1850. Prerequisites: Spch 111, 112, 113, and any two of Spch 211, 212, 213 or consent of the instructor.

312. AMERICAN AND BRITISH PUBLIC ADDRESS II. 4 HOURS. Continues Speech and Theater 311. From 1850 to 1920. Prerequisites: Spch 111, 112, 113, and any two of Spch 211, 212, 213 or consent of the instructor.

313. CONTEMPORARY PUBLIC ADDRESS. 4 HOURS. Contemporary speechmaking; principal focus on issues relating to economics and government, World War II, postwar international problems, and civil rights. Prerequisites: Spch 111, 112, 113, and any two of Spch 211, 212, 213 or consent of the instructor.

315. THE RHETORIC OF FREE SPEECH. 4 HOURS. The rhetorical processes employed by those speakers in the British House of Commons and in America who participated in the freedom of speech movements. Issues relating to the contemporary American scene. Prerequisites: Spch 212 and PolS 355 or consent of the instructor.

324. AMERICAN THEATER HISTORY I. 4 HOURS. Development from 1700 to 1914; historical trends and dramatic literature. Prerequisites: Spch 122 and at least 8 hours of credit from Spch 241, 261, 262, 264 or consent of the instructor.

325. AMERICAN THEATER HISTORY II. 4 HOURS. Development from 1914 to the present; native and European influences on theatrical trends. Prerequisites: Spch 122 and at least 8 hours of credit from Spch 241, 261, 262, 264 or consent of the instructor.

331. MASS MEDIA PROGRAMMING. 4 HOURS. Mass media program types, objectives, methods, and effects; creative development of programs from conception to script. Prerequisite: Two courses in speech, including Spch 232.

333. MASS COMMUNICATIONS. 4 HOURS. May be repeated for credit up to 8 hours. Intensive study of the nature of mass media in contemporary society. The legal and social responsibilities of mass media institutions in the United States and abroad. Prerequisite: Two courses in speech, including Spch 131.

334. WORLD BROADCASTING. 4 HOURS. The broadcast systems of the nations of the world; alternative and "mixed" systems; international organizations, agreements, exchanges, and problems; broadcasts to and from other countries; implications of such new developments as satellites; mass and nonmass uses. Prerequisites: Spch 113, 131, and 231 or consent of the instructor.

351. THEATER HISTORY AND CRITICISM: PRE-GRECIAN THROUGH MEDIEVAL. 4 HOURS. Theater literature, genre, styles, and criticism; emphasis on the origins of theater, forms and impulses, Greek and Roman tragedy and comedy, and medieval and liturgical drama. Prerequisites: Spch 122 or 123; Spch 251 or 262; Spch 264; concurrent registration in Spch 352 or 353.

352. ADVANCED ACTING TECHNIQUES: PRE-GRECIAN THROUGH MEDIEVAL. 4 HOURS. Acting theories, techniques, and criticism; emphasis on Greek and Roman tragedy and comedy and medieval and liturgical drama. Prerequisites: Spch 122 or 123; Spch 262, 264; concurrent registration in Spch 351.

353. ADVANCED TECHNIQUES OF THEATER PRODUCTION: PRE-GRECIAN THROUGH MEDIEVAL. 4 HOURS. Theater architecture, design, lighting, and directing; emphasis on the origins of theater, forms and impulses, Greek and Roman tragedy and comedy, and medieval and liturgical drama. Prerequisites: Spch 122, 123, 251, 264; concurrent registration in Spch 351.

354. THEATER HISTORY AND CRITICISM: TUDOR FARCE THROUGH SEVENTEENTH-CENTURY FRENCH. 4 HOURS. Theater literature, genre, styles, and criticism; emphasis on Tudor, Renaissance, *commedia del'arte*, Elizabethan, and seventeenth-century French theater. Prerequisites: Spch 122 or 123; Spch 251 or 262; Spch 264; concurrent registration in Spch 355 and/or 356.

355. ADVANCED ACTING TECHNIQUES: TUDOR FARCE THROUGH SEVENTEENTH-CENTURY FRENCH. 4 HOURS. Acting theories, techniques, and criticism; emphasis on Tudor, Renaissance, *commedia del'arte*, Elizabethan, and seventeenth-century French theater. Prerequisites: Spch 122 or 123; Spch 262; concurrent registration in Spch 354.

356. ADVANCED TECHNIQUES OF THEATER PRODUCTION: TUDOR FARCE THROUGH SEVENTEENTH-CENTURY FRENCH. 4 HOURS. Theater architecture, design, lighting, and directing; emphasis on Tudor, Renaissance, *commedia del'arte*, Elizabethan, and seventeenth-century French theater. Prerequisites: Spch 122 or 123; Spch 251, 264; concurrent registration in Spch 354.

357. THEATER HISTORY AND CRITICISM: ENGLISH RESTORATION THROUGH IBSENIAN REALISM. 4 HOURS. Theater literature, genre, styles and criticism; emphasis on Restoration comedy, melodrama, farce, comedy of manners, romanticism, realism, and naturalism in England, France, Russia, the United States, Ireland, Germany, and Scandinavia. Prerequisites: Spch 122 or 123; Spch 251, 262, 264; concurrent registration in Spch 358 and/or 359.

358. ADVANCED ACTING TECHNIQUES: ENGLISH RESTORATION THROUGH IBSENIAN REALISM. 4 HOURS. Acting theories, techniques, and criticism; emphasis on Restoration comedy, melodrama, farce, comedy of manners, romanticism, realism, and naturalism in England, France, Russia, the United States, Ireland, Germany, and Scandinavia. Prerequisites: Spch 122 or 123; Spch 262, 264; concurrent registration in Spch 357.

359. ADVANCED TECHNIQUES OF THEATER PRODUCTION: ENGLISH RESTORATION THROUGH IBSENIAN REALISM. 4 HOURS. Theater architecture, design, lighting, and directing; emphasis on Restoration comedy, melodrama, farce, comedy of manners, romanticism, realism, and naturalism in England, France, Russia, the United States, Ireland, Germany, and Scandinavia. Prerequisites: Spch 122 or 123; Spch 251, 264; concurrent registration in Spch 357.

372. INSTRUCTIONAL APPLICATIONS OF TELEVISION AND RADIO. 4 HOURS. Television and radio as instructional communications media; the design of instructional materials relating the communications requirements of subject matter to communications capabilities of television and radio; production, utilization, and evaluation of instructional television and radio presentations. Prerequisites: Spch 131 and two courses from Spch 231, 232, 233 or consent of the instructor.

374. MEDIA INTERNSHIP. 4 TO 12 HOURS. Media communication studies in a field setting. Students work in an approved professional field setting to investigate the uses of appropriate and relevant electronic media. Problem-solving

approach; individual projects developed through conferences with a University faculty member and a department-selected field supervisor. Prerequisites: Spch 233 and consent of the department head, obtained one term in advance.

375. SPEECH COMMUNICATION FIELD STUDY. 16 HOURS. Field placement with a variety of community organizations, agencies, and groups whose work is heavily dependent on effective public address and persuasive and group communication. The student is a participant-observer with emphasis on critical analysis of communication processes. Prerequisites: 16 hours of upper-division work in speech and consent of the instructor.

380. ETHNOGRAPHY OF COMMUNICATION. 4 HOURS. Social interaction viewed in terms of its context. The role of the investigator as participant-observer. The taxonomic method of description and analysis. Focus on urban contexts. Prerequisite: Spch 192 or consent of the instructor.

384. THE PSYCHOLOGY OF LANGUAGE. 4 HOURS. Same as Linguistics 374 and Psychology 354. Introductory survey of methods, theory, and research; the history and present status of psychology's interest in language behavior. Prerequisite: Consent of the instructor.

Speech for Foreign Students. See Additional Courses.

Swahili. See Additional Courses.

Women's Studies. See Additional Courses.

Yiddish. See Additional Courses.

Preprofessional Programs

The college offers course work that prepares students to enter the following professional programs: medical dietetics, medical laboratory sciences, medical record administration, physical therapy, dentistry, law, medicine, nursing, pharmacy, and veterinary medicine. The first year of the program in occupational therapy is also offered. A preprofessional adviser and other support services are available in the college office, 350 University Hall. In addition, meetings are arranged throughout the academic year to permit students in the preprofessional programs to discuss programs of study and questions about admissions requirements and procedures with representatives from the professional colleges.

Admission to a preprofessional curriculum does not guarantee admission to a professional school nor does attainment of the minimum grade point average for one of the curricula listed below in itself assure admission. A student who is not admitted to a professional school may continue to work for a baccalaureate at the University of Illinois at Chicago Circle by meeting all the graduation requirements of the College of Liberal Arts and Sciences.

The curricula listed below are designed to prepare the student for the professional programs at the University of Illinois campuses. However, since other professional schools may have different requirements for admission, a student's preprofessional program should be governed by the requirements of the school to which application is planned.

Medical Dietetics—90 quarter hours, exclusive of physical education and basic military science, distributed as follows:

English Composition 101, 102	8 hours
Natural sciences	
Biological Sciences 100, 101, 102, 250	21
Chemistry 112, 113, 114, 232, 233, 234	24
Mathematics 104; or 100 and 101	5-10
Social sciences	
Economics 120	4
Psychology 100	4
Sociology 100	4
Humanities	12
Electives to complete the required total of 90 hours	3-8

A student who is admitted to the program in medical dietetics at the University of Illinois at the Medical Center completes the third and fourth years in the School of Associated Medical Sciences of the College of Medicine, which awards the degree. The minimum grade point average for application to the University of Illinois at the Medical Center in the field of medical dietetics is 3.00 (A=5.00).

Medical Laboratory Sciences—90 quarter hours, exclusive of physical education and basic military science, distributed as follows:

English Composition 101, 102	8 hours
Natural sciences	
Biological Sciences 100, 101, 102	15
Chemistry[1] 112, 113, 114, 121, 232, 233, 234	29
Social sciences	12
Humanities	12
Electives to complete the required total of 90 hours	14

1. Students should begin chemistry as soon as possible.

A student who is admitted to the program in medical laboratory sciences at the University of Illinois at the Medical Center completes the third and fourth years, consisting of seven quarters, in the School of Associated Medical Sciences of the College of Medicine, which awards the degree. The minimum grade point average for application to the University of Illinois at the Medical Center in the field of medical laboratory sciences is 3.50 (A=5.00).

Medical Record Administration—135 quarter hours, exclusive of physical education and basic military science, distributed as follows:

English Composition 101, 102	8 hours
Natural sciences	
Biological Sciences 100, 101, 102, 133, 134	25
Physical sciences[1]	12
Social sciences	12
Humanities	12
Electives to complete the required total of 135 hours (24 hours of foreign language are highly recommended)	66

1. Physical science courses are selected in consultation with the preprofessional adviser. Courses in mathematics and geological sciences do not fulfill this requirement.

A student who is admitted to the program in medical record administration at the University of Illinois at the Medical Center completes the fourth year, consisting of four quarters beginning in June, in the School of Associated Medical Sciences of the College of Medicine, which awards the degree. The minimum grade point average for application to the University of Illinois at the Medical Center in the field of medical record administration is 3.00 (A=5.00).

Occupational Therapy—A student must be interviewed by the Director of the Occupational Therapy Curriculum of the School of Associated Medical Sciences or by a designated representative before being admitted to the curriculum. The first year may be completed at Chicago Circle.

First Year

English Composition 101, 102	8 hours
Physical sciences	12-15
Chemistry 112, 113, 114	
or	
Natural Sciences 101, 102, 103	
Psychology 100	4
Sociology 100 and one additional sociology course	8
Humanities	12
Physical education (highly recommended)	3

The second and third years are taken on the Urbana-Champaign campus. The fourth and fifth years (16 consecutive calendar months) are taken at the Medical Center in the School of Associated Medical Sciences of the College of Medicine, which awards the degree. The minimum grade point average for application to the University of Illinois at the Medical Center in the field of occupational therapy is 3.50 (A=5.00).

Physical Therapy—90 quarter hours, exclusive of physical education and basic military science, distributed as follows:

English Composition 101	4 hours
Natural sciences	
Biological Sciences 100, 101, 102	15
Chemistry 112, 113, 132	15
Mathematics 104 and 105; or 100, 101, and 105	8-13
Physics 101, 102, 103	15
Social sciences	
Psychology[1] 100, 150, 280	12
Humanities	8
Electives to complete the required total of 90 hours	8-13

In addition to the required 90 hours, at least 3 hours of physical education activity courses are required.

1. These 12 hours do not include prerequisites for the required psychology courses.

A student who is admitted to the program in physical therapy at the University of Illinois at the Medical Center completes the third and fourth years in the School of Associated Medical Sciences of the College of Medicine, which awards the degree. The minimum grade point average for application to the University of Illinois at the Medical Center in the field of physical therapy is 3.50 (A=5.00).

Predentistry—The predentistry program listed below includes the minimum courses required for admission to the University of Illinois College of Dentistry. Specific admission requirements of other dental schools are listed in *Admission Requirements of the American Dental Schools*, published by the American Association of Dental Schools, 200 East Chicago Avenue, Chicago, Illinois 60611.

Course Requirements—90 quarter hours, exclusive of physical education and basic military science, distributed as follows:

English Composition 101, 102	8 hours
Natural sciences	
Biological Sciences 100, 101, 102	15
Chemistry 112, 113, 114; or 117, 118, 119 and 232, 233, 234	24-27
Physics 101, 102	10
Electives to complete the required total of 90 hours (Physics 103 is strongly recommended)	30-33

Applicants to the University of Illinois College of Dentistry must also take the Dental Admission Test (DAT). This test is generally taken after completion of the minimum predental course requirements and during the year of application to the College of Dentistry. The American Association of Dental Schools sponsors a centralized application service (AADSAS). Application request forms for the DAT and the AADSAS may be obtained from the college office, 350 University Hall. The college office also provides a service for collecting letters of recommendation and can arrange for a predental student, in attendance at Chicago Circle for at least one year, to be reviewed by the Predmedical/Predental Committee of the University of Illinois at Chicago Circle. Further information concerning application procedures may be obtained from the college office.

Although the minimum requirement for application to the College of Dentistry at the University of Illinois is two years of college preparation, few students are actually admitted at that point. While many students complete at least three years prior to acceptance, most students accepted into the College of Dentistry have earned a bachelor's degree. Students are therefore encouraged to enroll in an undergraduate curriculum that will lead toward a degree in the College of Liberal Arts and Sciences. To obtain a degree in the College of Liberal Arts and Sciences, predentistry students must satisfy all degree requirements of the college as well as the required predental courses.

A student admitted to a college of dentistry prior to completion of the bachelor's degree may be eligible to receive this degree from Chicago Circle upon satisfactory completion of the first-year dental curriculum. The College of Liberal Arts and Sciences accepts a total of 48 quarter hours of credit from an accredited college of dentistry to enable a student to complete the requirements for a bachelor's degree, provided that (1) the student is in good

standing in the college of dentistry; (2) work taken in the college of dentistry does not duplicate previous work; (3) the courses are in fields such as biochemistry, physiology, histology, or anatomy as approved by the College of Liberal Arts and Sciences; (4) the student satisfies the residence requirement by completing at Chicago Circle at least the last 45 quarter hours prior to entry into a college of dentistry; and (5) the student meets all other requirements for graduation from the College of Liberal Arts and Sciences, including a major field of specialization and a 3.00 grade point average (A=5.00) in all course work taken both at Chicago Circle and other institutions.

Prelaw—The minimum requirements for application to the University of Illinois College of Law are a baccalaureate from an accredited college or university, a minimum grade point average of 3.50 (A=5.00) in all course work attempted, and a satisfactory score on the Law School Admission Test (LSAT). New students are admitted only in September.

There is no specific course of study required for admission to the University of Illinois College of Law. Thus, the student may elect a major in any field for the bachelor's degree but is advised to choose a well-rounded program of electives. To receive a degree from the College of Liberal Arts and Sciences, the student must complete all requirements for graduation (see *Graduation Requirements*).

The *Prelaw Handbook,* prepared each year by the Association of American Law Schools, has general information regarding undergraduate course selection. Also included is specific information about admissions criteria and application procedures for most of the nation's law schools. This handbook may be obtained from the Educational Testing Service, Box 944, Princeton, New Jersey 08540.

The *Law School Admission Bulletin,* which includes application forms for the Law School Admission Test (LSAT) and the Law School Data Assembly Service (LSDAS), is available from the college office, 350 University Hall; the Testing Service, 909 University Hall; or the Educational Testing Service.

Information and applications for the University of Illinois College of Law may be obtained by writing to the dean, College of Law, University of Illinois at Urbana-Champaign, Urbana, Illinois 61801.

Premedicine—Every medical college has specific requirements for admission. Therefore, a student's premedical curriculum is defined by the medical colleges to which application is planned. Specific admission requrements of various medical schools are listed in *Admission Requirements of US and Canadian Medical Schools,* published by the Association of American Medical Colleges, One Dupont Circle, NW, Washington, DC 20036

The University of Illinois College of Medicine endeavors to select applicants who, in the judgment of the Committee on Admissions, demonstrate the academic achievement, emotional stability, maturity, integrity, and motivation necessary for the successful study and practice of medicine. The Committee on Admissions is interested in evidence of capacity for mature and independent scholarship and not in rigid patterns of course work. Therefore, regardless of race, creed, color, or sex, the committee will consider the quality of work of each applicant in all areas, the breadth of education, achievement in advanced projects, or work experience that demonstrates the applicant's imagination, initiative, and creativity.

A student seeking admission to the College of Medicine may elect any major field of interest. Courses in biology, chemistry through organic, physics or biophysics, and the behavioral sciences will be particularly helpful in preparing for study in the College of Medicine. However, major fields may be in the humanities, the fine arts, or the behavioral, biological, or physical sciences. Mathematics through calculus is especially recommended for those anticipating advanced work in basic or clinical research.

All candidates must take the Medical College Admission Test (MCAT) as recommended and approved by the Association of American Medical Colleges. Letters of recommendation are required of all applicants. An interview of the candidate may be requested by the Committee on Admissions.

The College of Liberal Arts and Sciences suggests the following minimum science preparation:

Biological Sciences 100, 101, 102	15 hours
Chemistry 112, 113, 114; or 117, 118, 119; and 232, 233, 234, 235	28-31
Physics101, 102, 103	15

The Medical College Admission Test (MCAT) is generally taken after completion of this minimum program and during the year of application to a college of medicine. The American Association of Medical Schools sponsors a centralized application service (AMCAS). Application request forms for the MCAT and AMCAS can be obtained from the college office, 350 University Hall. The college office also provides a service for collecting letters of recommendation and can arrange for a premedical student, in attendance at Chicago Circle for at least one year, to be reviewed by the Premedical/Predental Committee of the University of Illinois at Chicago Circle. Further information concerning application procedures may be obtained from the college office.

A student admitted to a college of medicine prior to completion of the bachelor's degree may be eligible to receive this degree from Chicago Circle upon satisfactory completion of the first-year medical curriculum. The College of Liberal Arts and Sciences accepts a total of 48 quarter hours of credit from an accredited college of medicine to enable a student to complete the requirements for a bachelor's degree, provided that (1) the student is in good standing in the college of medicine; (2) work taken in the college of medicine does not duplicate previous work; (3) the courses are in fields such as biochemistry, physiology, histology, or anatomy as approved by the College of Liberal Arts and Sciences; (4) the student satisfies the residence requirement by completing at Chicago Circle at least the last 45 quarter hours prior to entry into a college of medicine; and (5) the student meets all other requirements for graduation from the College of Liberal Arts and Sciences, including a major field of specialization and a 3.00 grade point average (A=5.00) in all course work taken both at Chicago Circle and other institutions.

Prenursing—45 quarter hours, exclusive of physical education and basic military science, distributed as follows:

English Composition 101, 102	8 hours

Natural sciences	
Biological sciences	
Any two from 100, 101, or 102	10
Chemistry 112, 132	10
Social sciences	
Psychology 100	4
Sociology 100	4
Humanities	8
Electives to complete the required total of 45 hours	1

A student who is admitted to the program in nursing at the University of Illinois at the Medical Center completes the second through fourth years in the College of Nursing, which awards the degree. The minimum grade point average for application to the University of Illinois at the Medical Center in the field of nursing is 3.50 (A=5.00).

Prepharmacy—45 quarter hours, exclusive of physical education, health science, and basic military science, distributed as follows:

English Composition 101, 102	8 hours
Natural sciences	
Biological Sciences 100, 101, 102	15
Chemistry 112, 113, 114; or 117, 118, 119	15-18
Mathematics[1] 104 and 105; or 100, 101, 105	8-13
If necessary, electives to complete the required total of 45 hours	

1. Mathematics course requirements may be met by placement or by course work.

Prepharmacy students must take the Pharmacy College Admission Test (PCAT), preferably during the fall term. Application request forms for the PCAT can be obtained from the college office, 350 University Hall.

A student may elect to remain a second year at Chicago Circle, in which case the program will be as follows:

Chemistry 232, 233, 234, 235, 236, 237	16 hours
Physics 101, 102, 103	15
Mathematics 130, 131	10
Electives to complete the required total of 90 hours	

The second year (at the student's option) and the third through fifth years are taken in the College of Pharmacy, which awards the degree. The minimum grade point average for application to the University of Illinois at the Medical Center in the field of pharmacy is 3.50 (A=5.00).

Preveterinary Medicine—90 quarter hours, exclusive of physical education and basic military science, distributed as follows:

English Composition 101, 102	8 hours
Natural sciences	
Biological Sciences 100, 101, 102	15
Chemistry 112, 113, 114; or 117, 118, 119 and 232, 233, 234, 235, 236	29-32
Physics 101, 102, 103	15
Humanities and social sciences	24

Even though applicants may complete the preprofessional requirements with 90 quarter hours, few students are actually admitted to the University of Illinois College of Veterinary Medicine at that point. Students are therefore encouraged to enroll in an undergraduate curriculum that will lead toward a bachelor's degree if they are not successful in being admitted into the professional program.

Applicants to the College of Veterinary Medicine must take the Veterinary Aptitude Test (VAT). This test is generally taken after completion of the minimum course requirements and during the year of application to the College of Veterinary Medicine. Information regarding this test may be obtained from the college office, 350 University Hall.

The four years of professional study are taken in the College of Veterinary Medicine at the University of Illinois at Urbana-Champaign, which awards the degree. The minimum grade point average for application to the Urbana campus in the field of veterinary medicine is 3.50 (A=5.00). However, the competitive grade point average is considerably above this level at the present time.

Jane Addams School of Social Work

Samuel Weingarten, PhD, Acting Director
Robert T. Constable, DSW, Associate Director

Professors: George W. Magner, PhD; Mary E. Sullivan, MA; Harvey Treger, MA; Samuel Weingarten, PhD; Imogene S. Young, DSW; Sidney E. Zimbalist, DSW.

Associate Professors: Claire M. Anderson, PhD; Frederick Brown, MSS; Patricia Brown, PhD; Leona B. Cain, MSW; Stephen Z. Cohen, PhD; Robert T. Constable, DSW; Eloise J. Cornelius, MA; Frieda H. Engel, MS; James Forkeotes, MSW; Joseph R. Godwin, PhD; Joy Johnson, MA; Kenneth Krause, PhD; Baruch Levine, PhD; Almera Lewis, MSW; Edwin Marksman, MSW; Ord Matek, MA; Joan Shireman, PhD; Dorothy R. Young, MSW.

Assistant Professors: John C. Dietmann, MA; Phillip Jackson, PhD; Clarence Lipschutz, MSW; F Dean Luse, MSW; Ruth Meyer, MA; Seymour Mirelowitz, MSW; Christopher G. Narcisse, MSW; Barbara Wickell, MSW.

Lecturers: Eddie Davis, MA; Salley Goren, MA; John Ham, MSW.

The Jane Addams School of Social Work offers a full continuum of professional education: the Bachelor of Social Work, the Master of Social Work, and the Doctor of Social Work. The majority of students in the bachelor's and master's programs prepare for direct professional practice. The bachelor's program seeks to prepare students for roles in social work practice involving work with individuals, families, groups, and communities in services provided through public and private social work agencies.

Undergraduate Study in Social Work

The Bachelor of Social Work (BSW) program provides: (1) practice preparation for students who may enter social welfare employment upon re-

ceipt of the baccalaureate, (2) preparation for students who plan to enter a graduate school of social work, and (3) a basic understanding of the social welfare system for students who plan graduate work in allied professions or academic disciplines.

The program is concentrated in the junior and senior years. The school has a separate admissions procedure and considers those students who are in good standing in the first two years of undergraduate education. Students must be of junior standing and have demonstrated not only academic ability but also the capacity for interpersonal relationships and the potential for successful practice.

Interested persons should obtain special application forms from the Jane Addams School of Social Work. A limited number of students are admitted each year.

The social work major may decide on one of two tracks after completion of the junior year: (a) Social Treatment, which focuses on development of skills in work with individuals, families, and groups, or (b) Community Development, which offers courses in planning, organization, and intervention in communities.

As an applied field, social work uses theory from the basic social sciences and develops a variety of practice skills and methods for use by its practitioners. Thus, the program includes: (a) a broad liberal arts base, (b) courses with social work content, and (c) appropriate field instruction with direct and supervised practice.

Degree Requirements

1. Completion of all general education requirements of the University.
2. Junior standing (90 hours), including: English Composition 101 and 102 (8 hours), Mathematics 100 or 104 (5 hours), and science, humanities, or foreign language electives (16 hours). Individual consideration is given to junior college transfer students who have completed the Associate of Arts requirements in an approved social service aide or community services curriculum.
3. Other specific requirements:
   a. Successful completion of 186 quarter hours.
   b. A minimum of 48 hours of social work courses spread among five areas: (1) social welfare policy, (2) dynamics of human processes, (3) methods of social work practice, (4) research methodology, and (5) field practice.
   c. A minor coordinated with the student's interest: 24-32 quarter hours of which 12 must be at the 200 or 300 level.

Upon admission to the school, each student is assigned to a faculty adviser. The course of study best suited to the student's interests and the demands of professional practice is developed through advising.

Students interested in the Bachelor of Social Work program must apply to the Jane Addams School of Social Work and be admitted by the Admissions Committee of the school. A grade point average of 3.50 (A=5.00) and junior standing are required.

Courses (SocW)

200. CAREERS IN HUMAN SERVICES. 2 TO 4 HOURS. The philosophy and values underlying the human services careers and their organizations and consumers; examination of these areas in relation to changing concepts. Identification of the challenges confronting our society and the human services careers and suggested alternatives for coping with such demands. Prerequisites: Sophomore standing and consent of the instructor.

300. METHODS OF SOCIAL WORK INTERVENTION I. 2 TO 4 HOURS. The basic concepts of social casework, social group work, and combined methods. Analysis and study of underlying philosophy, values, and principles. Skills used in working with groups, individuals, and families.

305. EDUCATION POLICY FOR CITIZENS. 4 HOURS. Same as Education 305. The concepts and information that all citizens need to participate effectively as education consumers and policy affecters. History, economics, basic statistics, sociology, research, and current and future trends affecting American education at all levels. Prerequisite: Consent of the instructor.

310. METHODS OF SOCIAL WORK INTERVENTION II. 4 HOURS. The philosophy, concepts, processes, and methods of social work intervention with groups. Prerequisite: SocW 300.

321. COMBINED TREATMENT METHODS I. 1 TO 4 HOURS. Identification of components of social work practice, including underlying philosophy, concepts, generic principles, values, and methods of social casework and group work. Similarities and differences in the two primary social work treatment methods. Emphasis on the social worker's role in offering service through a professional relationship in case and group situations. Prerequisite: Consent of the instructor.

325. COMMUNITY ORGANIZATION. 2 TO 4 HOURS. Principles, concepts, and methods of community organization in social work at the neighborhood, local, state, national, and international levels.

330. FIELD EXPERIENCE. 2 TO 4 HOURS. Participation in a social agency's service without the responsibility involved in professional social work practice. Prerequisites: Junior standing, SocW 200, and consent of the instructor.

337. OBSERVATION-SIMULATION LABORATORY. 2 TO 4 HOURS. Observation and simulation of a broad range of organization and planning experiences, coordinating basic theories presented in introductory community organization courses with contemporary practice. Prerequisite: Credit or concurrent registration in SocW 325.

341. HUMAN GROWTH AND BEHAVIOR I. 3 TO 6 HOURS. The major forces influencing the growth and behavior of the individual from birth through adolescence. Sociocultural, familial, physical, emotional, and intellectual factors as they enhance or retard social functioning. The relevance of this content to the profession of social work is constantly considered.

366. SOCIOLOGY OF MENTAL DISORDERS. 3 HOURS. Same as HC 366 (School of Public Health). Sociocultural variations involved in mental illness. Social epidemiology of mental illness, patient career cycle, societal labeling and stigma, and community aspects of mental health. Prerequisite: One basic sociology course or HC 300 (School of Public Health) or consent of the instructor.

367. SOCIOLOGY OF MENTAL RETARDATION. 3 HOURS. Same as HC 367 (School of Public Health). Sociocultural aspects involved in mental retardation. Social epidemiology of retardation, family adjustment problems, patient career cycle, and community relations. Prerequisite: One basic sociology course or HC 300 (School of Public Health) or consent of the instructor.

370. THE SOCIAL SERVICE AGENCY: STRUCTURE AND ENVIRONMENT. 4 HOURS. Analysis of outcome, operations, and relations with community environment of social service agencies. Provides a frame of reference for understanding the broader community, policy, and agency components of social service delivery. Prerequisites: SocW 200 and consent of the instructor.

371. SOCIAL SERVICES AND WELFARE POLICY I. 2 TO 4 HOURS. The function, nature, and scope of the social welfare institution. Social services as a response to social, personal, and economic problems of people. Effects of economic and social growth and change on the welfare enterprise.

372. SOCIAL SERVICES AND WELFARE POLICY II. 2 TO 4 HOURS. Current provisions and alternatives for their solution in the social security and money assistance programs. Prerequisite: SocW 371.

ADDITIONAL COURSES

All Campus (CC)

299. CONTEMPORARY TOPICS. 1 to 4 HOURS. Total credit may not exceed 8 hours. The same topic may not be repeated for credit.

Arabic (Arab)

101. ELEMENTARY ARABIC I. 4 HOURS. For students who have not studied the language. Modern written Arabic; literature, science, and the news media. Reading skills, correct pronunciation, fundamental rules of grammar, oral and written self-expression.

102. ELEMENTARY ARABIC II. 4 HOURS. For students who have not studied the language. Modern written Arabic; literature, science, and the news media. Reading skills, correct pronunciation, fundamental rules of grammar, oral and written self-expression. Prerequisite: Arab 101 or the equivalent.

103. ELEMENTARY ARABIC III. 4 HOURS. For students who have not studied the language. Modern written Arabic; literature, science, and the news media. Reading skills, correct pronunciation, fundamental rules of grammar, oral and written self-expression. Prerequisite: Arab 102 or the equivalent.

104. INTERMEDIATE ARABIC I. 4 HOURS. Modern written Arabic; literature, science, and the news media. Reading and analysis of texts in various subjects based on a wide range of vocabulary to develop better composition in contemporary written Arabic. Prerequisite: Arab 103 or the equivalent.

105. INTERMEDIATE ARABIC II. 4 HOURS. Modern written Arabic; literature, science, and the news media. Reading and analysis of texts in various subjects based on a wide range of vocabulary to develop better composition in contemporary written Arabic. Prerequisite: Arab 104 or the equivalent.

106. INTERMEDIATE ARABIC III. 4 HOURS. Modern written Arabic; literature, science, and the news media. Reading and analysis of texts in various subjects based on a wide range of vocabulary to develop better composition in contemporary written Arabic. Prerequisite: Arab 105 or the equivalent.

Chinese (Chin)

101. ELEMENTARY CHINESE I. 4 HOURS. Four additional half hours per week in the language laboratory. Reading, grammar, and simple oral practice.

102. ELEMENTARY CHINESE II. 4 HOURS. Four additional half hours per week in the language laboratory. Prerequisite: Chin 101 or the equivalent.

103. ELEMENTARY CHINESE III. 4 HOURS. Four additional half hours per week in the language laboratory. Prerequisite: Chin 102 or the equivalent.

104. INTERMEDIATE CHINESE I. 4 HOURS. Reading of Chinese texts; emphasis on Chinese history. Prerequisite: Chin 103 or the equivalent.

105. INTERMEDIATE CHINESE II. 4 HOURS. Continued reading; emphasis on Chinese geography. Prerequisite: Chin 104 or the equivalent.

106. INTERMEDIATE CHINESE III. 4 HOURS. Continued reading; emphasis on newspapers and selected articles in the Chinese language. Prerequisite: Chin 105 or the equivalent.

Health Science (HSci)

240. MENTAL HEALTH IN THE MODERN URBAN COMMUNITY. 3 HOURS. Definition of urban problems and their impact upon the mental health of the individual, the family, and the community. Focus is on the young adult moving from the role of child in the family to adult developing his or her own family. Goals, values, processes, and problems are evaluated by the class as a group. Prerequisite: Sophomore standing.

Humanities (Hum)

101. INTRODUCTION TO POETRY. 4 HOURS. Same as English 101. Reading and discussion of representative poems from the ancient world to the present.

102. INTRODUCTION TO DRAMA. 4 HOURS. Same as English 102. Reading and discussion of representative plays from the ancient world to the present.

103. INTRODUCTION TO FICTION. 4 HOURS. Same as English 103. Reading and discussion of representative fiction from the beginnings to the present.

104. WESTERN LITERATURE OF THE ANCIENT WORLD. 4 HOURS. Same as Classics 104. Primarily for non-English and nonlanguage majors. Selected masterpieces of poetry, drama, and fiction.

105. WESTERN LITERATURE FROM THE MIDDLE AGES THROUGH THE SEVENTEENTH CENTURY. 4 HOURS. Primarily for non-English and nonlanguage majors. Selected masterpieces of poetry, drama, fiction, and prose.

106. WESTERN LITERATURE FROM THE EIGHTEENTH CENTURY TO THE PRESENT. 4 HOURS. Primarily for non-English and nonlanguage majors. Selected masterpieces of poetry, drama, fiction, and prose.

107. COLLOQUIUM ON WORLD LITERATURE AND RELATED FIELDS. 4 HOURS. May be repeated for a maximum of 12 hours. One specific aspect of literature and its relationship to a limited problem in such fields as the fine arts, philosophy, politics, psychology, religion, science, and sociology. Emphasis on the close study of a limited number of works and on independent study, including oral and written reports.

108. COLLOQUIUM ON THEMES IN WORLD LITERATURE. 4 HOURS. May be repeated for a maximum of 12 hours. One selected theme; emphasis on the close study of a limited number of works and on independent study, including oral and written reports.

120. AMERICAN LITERATURE AND AMERICAN CULTURE. 4 HOURS. May not be repeated for credit. Same as English 120. Analysis of interconnections between American literature and American culture. Content varies.

121. MODERN LITERATURE AND MODERN CULTURE. 4 HOURS. May not be repeated for credit. Same as English 121. Analysis of interconnections between modern literature and modern culture. Content varies.

130. THE INDIVIDUAL IN PERICLEAN ATHENS. 4 HOURS. Same as Classics 150. A description of a typical fifth-century BC Athenian; his education, amusements, role in public affairs, moral and religious beliefs, manner of worshipping the gods, and confrontation with great issues.

131. THE INDIVIDUAL IN THE ROMAN REPUBLIC. 4 HOURS. Same as Classics 151. Introduction to the private life and social institutions of the Roman Republic; special focus on upward mobility as manifested by the typical socially and politically active Roman.

141. DOSTOEVSKY. 4 HOURS. Same as Russian 141. Discussion of selected short stories and novels by Fyodor Dostoevsky. Knowledge of Russian is not required.

142. TOLSTOY. 4 HOURS. Same as Russian 142. Discussion of the writings of Leo Tolstoy. Knowledge of Russian is not required.

143. CHEKHOV. 4 HOURS. Same as Russian 143. Discussion of selected short stories and plays by Anton Chekhov. Knowledge of Russian is not required.

144. GOGOL. 4 HOURS. Same as Russian 144. Discussion of selected prose works and plays by Nikolai Gogol. Knowledge of Russian is not required.

145. SOLZHENITSYN. 4 HOURS. Same as Russian 145. Discussion of selected short stories and novels by Alexander Solzhenitsyn. Knowledge of Russian is not required.

146. WOMEN IN RUSSIAN LITERATURE. 4 HOURS. Same as Russian 146 and Women's Studies 146. Major works that reflect and shaped the attitudes toward, and experience of, women in Russia from earliest times to the Soviet period. Knowledge of Russian is not required.

151. HENRYK SIENKIEWICZ. 4 HOURS. Same as Polish 151. The most famous Polish writer and Nobel Prize winner in 1905; discussion of his major works. Knowledge of Polish is not required.

152. ADAM MICKIEWICZ. 4 HOURS. Same as Polish 152. The greatest Polish poet; a description of his romantic lyrics, drama, and poetical epic. Knowledge of Polish is not required.

153. ALEXANDER FREDRO. 4 HOURS. Same as Polish 153. The greatest Polish comedy playwright; a description of his major works. Knowledge of Polish is not required.

154. STANISLAW IGNACY WITKIEWICZ. 4 HOURS. Same as Polish 154. A forerunner of the Theater of the Absurd and a popular figure in contemporary world theater; discussion of his major works. Knowledge of Polish is not required.

155. JAN KOCHANOWSKI. 4 HOURS. Same as Polish 155. The greatest Polish Renaissance poet and creator of Polish poetry; a description of his major works. Knowledge of Polish is not required.

161. FRENCH CIVILIZATION I. 4 HOURS. Not open to French majors or minors. Instruction and readings in English. Same as French 161. History of French civilization from the end of the Middle Ages to the end of the Wars of Religion, considered in the light of changes that were typical for all of Western Europe. The literature, religious thought, art, and sciences of this period are viewed against the background of political and social change.

162. FRENCH CIVILIZATION II. 4 HOURS. Not open to French majors or minors. Instruction and readings in English. Same as French 162. Social, political, and religious changes in the seventeenth and eighteenth centuries studied through the literature of the classical period and the French Enlightenment.

163. FRENCH CIVILIZATION III. 4 HOURS. Not open to French majors or minors. Instruction and readings in English. Same as French 163. The ideological struggles and social-political changes of the nineteenth and twentieth centuries as seen through the novels, memoirs, histories, and social tracts of the period.

167. RELIGIOUS THEMES OF FRENCH WRITERS I. 4 HOURS. Same as French 167 and Religious Studies 167. Evolution of the religious outlook of French writers from a theocentric to a humanistic perspective from the Middle Ages to 1700. Instruction and readings in English. Prerequisite: Consent of the instructor.

168. RELIGIOUS THEMES OF FRENCH WRITERS II. 4 HOURS. Same as French 168 and Religious Studies 168. The triumph of humanistic faith and its collapse (1700 to 1850). Instruction and readings in English. Prerequisite: Consent of the instructor.

169. RELIGIOUS THEMES OF FRENCH WRITERS III. 4 HOURS. Same as French 169 and Religious Studies 169. From 1850 to the present: the loss of faith in science; Catholic revival; existentialism; the absurd. Instruction and readings in English. Prerequisite: Consent of the instructor.

170. MASTERPIECES OF LUSO-BRAZILIAN LITERATURE IN ENGLISH TRANSLATION. 4 HOURS. May be repeated for credit each term topics change. Same as Latin American Studies 170 and Portuguese 170. Representative works with background material.

171. READINGS IN LUSO-BRAZILIAN CULTURE IN ENGLISH TRANSLATION. 4 HOURS. Same as Latin American Studies 171 and Portuguese 171. Selected topics. May be repeated for credit each term topics change.

172. PORTUGUESE LITERATURE IN ENGLISH TRANSLATION. 4 HOURS. Same as Portuguese 172. Introduction to the Portuguese literary tradition.

Reading and discussion of major literary movements, individual works, and such literary figures as Gil Vicente, Camoes, Eca de Queiroz, and Fernando Pessoa. Prerequisites: Hum 170 and 171 or consent of the instructor.

180. RABELAIS AND MONTAIGNE. 4 HOURS. Not open to French majors or minors. Same as French 180. Rabelais's *Gargantua, Pantagruel,* and *Book Third* and Montaigne's principal essays in English translation.

181. ROUSSEAU AND VOLTAIRE. 4 HOURS. Not open to French majors or minors. Same as French 181. Selected works in English translation.

182. BALZAC AND STENDHAL. 4 HOURS. Not open to French majors or minors. Same as French 182. Selected works in English translation.

183. CAMUS AND SARTRE. 4 HOURS. Not open to French majors or minors. Same as French 183. Selected works in English translation.

184. GREAT FRENCH WRITERS IN TRANSLATION. 4 HOURS. May be repeated for credit. Not open to French majors or minors. Same as French 184. Selections in English translation from the major works of France's greatest writers. Authors are announced each term.

185. MASTERPIECES OF GERMAN LITERATURE IN ENGLISH TRANSLATION. 4 HOURS. Not open to German majors. Same as German 185.

186. MASTERPIECES OF FRENCH LITERATURE IN ENGLISH TRANSLATION. 4 HOURS. Not open to French majors or minors. Same as French 186. Reading of selected works from the seventeenth century to the present.

187. MASTERPIECES OF SPANISH LITERATURE IN ENGLISH TRANSLATION. 4 HOURS. Not open to Spanish majors. Same as Spanish 187.

189. TOPICS IN GERMAN LITERATURE IN TRANSLATION. 4 HOURS. May be repeated for a maximum of 12 hours of credit. Same as German 189. Study of a prominent author or a group of related authors of a movement, period, idea, or genre.

190. FRANZ KAFKA. 4 HOURS. Same as German 190. Major novels and short stories in English translation.

191. BERTOLT BRECHT. 4 HOURS. Same as German 191. Major works in English translation.

192. HERMANN HESSE. 4 HOURS. Same as German 192. Major works in English translation.

193. LOVE, WAR, AND THE OTHER WORLD: THE LITERATURE OF MEDIEVAL GERMANY IN TRANSLATION. 4 HOURS. Same as German 193. Readings of representative works from the Middle Ages; special emphasis on the classical period. Knowledge of German is not required.

194. GUNTER GRASS AND HEINRICH BOLL. 4 HOURS. Same as German 194. Their major works in English translation.

195. GOETHE'S WORKS IN TRANSLATION. 4 HOURS. Same as German 195. *Faust* and other representative works in English translation.

196. MAJOR WORKS OF SCHILLER IN ENGLISH TRANSLATION. 4 HOURS. Same as German 196. Lectures and discussions on Schiller's dramas and esthetic treatises.

197. THOMAS MANN. 4 HOURS. Same as German 197. Selected works in English translation.

198. CONTEMPORARY GERMAN PLAYS IN TRANSLATION. 4 HOURS. Same as German 198. The abuse of power and depersonalization in twentieth-century society. Reading of Durrenmatt, Frisch, and other representative dramatists.

201. ITALIAN LITERATURE IN ENGLISH TRANSLATION I. 4 HOURS. Same as Italian 201. Development from its origins to the fifteenth century. Lecture, reading, and discussion of major works. Prerequisite: Sophomore standing or consent of the instructor.

202. ITALIAN LITERATURE IN ENGLISH TRANSLATION II. 4 HOURS. Same as Italian 202. Development from the sixteenth to the eighteenth centuries. Lecture, reading, and discussion of major works. Prerequisite: Sophomore standing or consent of the instructor.

203. ITALIAN LITERATURE IN ENGLISH TRANSLATION III. 4 HOURS. Same as Italian 203. Development from the beginning of the nineteenth century to the present. Lecture, reading, and discussion of major works. Prerequisite: Sophomore standing or consent of the instructor.

219. SERBIAN FOLKLORE AND MYTHOLOGY. 4 HOURS. Same as Slavic Languages and Literatures 219. The folklore and mythological heritage of the Serbian civilization.

220. LITERATURE AND POPULAR CULTURE. 4 HOURS. Same as English 220. For English majors and nonmajors. The relationship between a society's literature and its various forms of popular culture. Content varies. Prerequisite: Junior standing or 8 hours of English or consent of the instructor.

221. INTRODUCTION TO POLISH LITERATURE I. 4 HOURS. Same as Polish 221. Major trends and authors from the Renaissance to Romanticism: Rey, Kochanowski, Krasicki, and others. Prerequisite: Junior standing or consent of the instructor.

222. INTRODUCTION TO POLISH LITERATURE II. 4 HOURS. Same as Polish 222. Major trends and authors of the nineteenth century: Mickiewicz, Slowacki, Krasinski, Norwid, Fredro, Orzeszkowa, Sienkiewicz, and Prus. Prerequisite: Junior standing or consent of the instructor.

223. INTRODUCTION TO POLISH LITERATURE III. 4 HOURS. Same as Polish 223. Major trends and authors of the twentieth century: Wyspianski, Zeromski, Reymont, Tuwim, and others. Prerequisite: Junior standing or consent of the instructor.

225. SLAVIC ROMANTICISTS: PUSHKIN, MICKIEWICZ, AND SHEVCHENKO. 4 HOURS. Same as Slavic Languages and Literatures 225. Comparative study of the three leading Slavic Romanticists and their ties with the Romantic Movement of the West.

226. SLAVIC EXPERIMENTAL DRAMA. 4 HOURS. Same as Slavic Languages and Literatures 226. Modern experimental playwriting in Russian, Polish, Czechoslovak, Yugoslav, and Ukrainian literatures.

227. CONTEMPORARY SLAVIC POETRY. 4 HOURS. Same as Slavic Languages and Literatures 227. The most representative contemporary poets of Russia, Poland, Czechoslovakia, Yugoslavia, and the Ukraine. Prerequisite: Sophomore standing or consent of the instructor.

231. INTRODUCTION TO RUSSIAN LITERATURE I. 4 HOURS. Same as Russian 221. Russian literature from 988 to 1830. Prerequisite: Junior standing or consent of the instructor.

232. INTRODUCTION TO RUSSIAN LITERATURE II. 4 HOURS. Same as Religious Studies 222 and Russian 222. Prose fiction from 1830 to 1880. Prose and poetry from 1880 to 1905. Special attention to the works of Pushkin, Lermontov, Gogol, Turgenev, Dostoevsky, and Tolstoy and to the "esthetic revival" after 1890. Prerequisite: Junior standing or consent of the instructor.

233. INTRODUCTION TO RUSSIAN LITERATURE III. 4 HOURS. Same as Russian 223. Twentieth century literature from 1905 to the present; special attention to works by Gorky, Bunin, Sholokhov, Pasternak, and others. Prerequisite: Junior standing or consent of the instructor.

235. STUDIES IN EXISTENTIALIST LITERATURE. 4 HOURS. Same as Philosophy 235 and Religious Studies 235. Imaginative works by Dostoevsky, Rilke, Kafka, Sartre, and Camus; selections from Pascal, Kierkegaard, Nietzche, Jaspers, and Tillich. Prerequisite: Junior standing or consent of the instructor.

240. SPANISH LITERATURE IN TRANSLATION I. 4 HOURS. Not open to Spanish majors or minors or to students who have credit in courses above Spanish 200. Same as Spanish 240. Major works from the *Cid* to the end of the nineteenth century. Prerequisite: Sophomore standing or consent of the instructor.

241. SPANISH LITERATURE IN TRANSLATION II. 4 HOURS. Not open to Spanish majors or minors or to students who have credit in courses above Spanish 200. Same as Spanish 241. Major works from 1898 to the present. Prerequisite: Sophomore standing or consent of the instructor.

242. SPANISH-AMERICAN LITERATURE IN TRANSLATION. 4 HOURS. Not open to Spanish majors or minors or to anyone with credit in Spanish above the 200 level. Same as Spanish 242. Major works from the beginning to the present; special emphasis on the nineteenth and particularly the twentieth centuries. Prerequisite: Sophomore standing or consent of the instructor.

248. MYTHOLOGY OF GREECE. 4 HOURS. Same as Classics 248 and Religious Studies 248. Intensive study of the gods and heroic sagas of the Greeks through original sources in translation.

249. GREEK TRAGIC DRAMA IN TRANSLATION. 4 HOURS. Same as Classics 249. Knowledge of Greek is not required. The plays of Aeschylus, Sophocles, Euripides. Prerequisite: Junior standing or consent of the instructor.

251. GREEK POETRY IN TRANSLATION. 4 HOURS. Same as Classics 251. Knowledge of Greek is not required. Classical Greek poetry from its beginnings to the Byzantine period.

252. ROMAN SATIRE. 4 HOURS. Same as Classics 252. Knowledge of Latin is not required. Selections from Horace, Persius, Petronius, Seneca, Martial, and Juvenal.

253. THE INTELLECTUAL DEVELOPMENT OF GREECE. 4 HOURS. Same as Classics 253 and Religious Studies 253. Knowledge of Greek is not required. Selections from the philosophers, poets, historians, and scientists. Prerequisite: Junior or senior standing.

254. GREEK COMEDY IN TRANSLATION. 4 HOURS. Same as Classics 254. Knowledge of Greek is not required. The plays of Aristophanes and Menander. Prerequisite: Junior standing or consent of the instructor.

255. ROMAN COMEDY IN TRANSLATION. 4 HOURS. Same as Classics 255. Knowledge of Latin is not required. The plays of Plautus and Terence. Prerequisite: Junior standing or consent of the instructor.

256. GREEK AND ROMAN EPIC POETRY. 4 HOURS. Same as Classics 256. Knowledge of Greek and Latin is not required. The epic poems of Homer, Lucretius, Vergil, and others in the Greco-Roman tradition. Prerequisite: Junior standing or consent of the instructor.

257. CLASSICAL GREEK LITERATURE. 4 HOURS. Same as Classics 257. Knowledge of Greek is not required. Survey of ancient Greek literature with readings from representative classic texts. Prerequisite: Junior standing or approval of the department.

258. CLASSICAL ROMAN LITERATURE. 4 HOURS. Same as Classics 258. Survey of ancient Roman literature with readings from representative classic texts.

259. CLASSICAL LITERARY CRITICISM. 4 HOURS. Same as Classics 259. The primary extant sources: Aristotle, *Poetics;* Horace, *Ars Poetica;* Pseudo-Longinus, *On the Sublime;* Quintilian, *Institutio Oratoria.* Knowledge of Greek or Latin is helpful but not essential. Prerequisite: Junior standing.

261. STUDIES IN SERBIAN LITERATURE I. 4 HOURS. Same as Slavic Languages and Literatures 221. From the beginnings to the Age of Romanticism: medieval literature, popular oral tradition, rationalist revival. Prerequisite: Sophomore standing or consent of the instructor.

262. STUDIES IN SERBIAN LITERATURE II. 4 HOURS. Same as Slavic Languages and Literatures 222. Romantic period and early realists; prose and poetry. Prerequisite: Sophomore standing or consent of the instructor.

263. STUDIES IN SERBIAN LITERATURE III. 4 HOURS. Same as Slavic Languages and Literatures 223. Realists of the turn of the century. The modernist movement from *fin de siecle* to World War II. The postwar period; concentration on Nobel Prize winner Ivo Andric. Prerequisite: Sophomore standing or consent of the instructor.

270. SURVEY OF LITERATURE OF THE WESTERN WORLD FROM THE MIDDLE AGES THROUGH THE RENAISSANCE. 4 HOURS. Chronological survey of the major works of Western literature. Prerequisite: 8 hours of literature or consent of the instructor.

271. SURVEY OF LITERATURE OF THE WESTERN WORLD FROM THE SEVENTEENTH THROUGH THE EIGHTEENTH CENTURIES. 4 HOURS. Chronological survey of the major works of Western literature. Prerequisite: 8 hours of literature or consent of the instructor.

272. SURVEY OF LITERATURE OF THE WESTERN WORLD FROM THE NINETEENTH CENTURY TO THE PRESENT. 4 HOURS. Chronological survey of the major works of Western literature. Prerequisite: 8 hours of literature or consent of the instructor.

273. THE BIBLE AS LITERATURE I: THE OLD TESTAMENT. 4 HOURS. Same as Religious Studies 273. Historical and analytical study of the Old Testament portion of the English Bible: concentration on the King James Version, with attention to more recent revisions of that version. Prerequisite: Junior standing or consent of the instructor.

274. THE BIBLE AS LITERATURE II: THE APOCRYPHA AND THE NEW TESTAMENT. 4 HOURS. Same as Religious Studies 274. Historical and analytical study of the Apocrypha and New Testament portions of the English Bible: concentration on the King James Version, with attention to more recent revisions of that version. Prerequisite: Junior standing or consent of the instructor.

275. COLLOQUIUM ON GENRES AND MODES OF WORLD LITERATURE. 4 HOURS. May be repeated for a maximum of 12 hours. One particular genre or mode; emphasis on the close study of a limited number of works and on independent study, including oral and written reports. Prerequisite: 8 hours of literature or consent of the instructor.

276. COLLOQUIUM ON MOVEMENTS AND INFLUENCES ON WORLD LITERATURE. 4 HOURS. May be repeated for a maximum of 12 hours. One particular movement in or influence on world literature; emphasis on the close study of a limited number of works and on independent study, including oral and written reports. Prerequisite: 8 hours of literature or consent of the instructor.

277. COLLOQUIUM ON ETHNIC AND NATIONAL LITERATURE IN TRANSLATION. 4 HOURS. May be repeated for a maximum of 12 hours. One particular ethnic or national literature; emphasis on the close study of a limited number of works and on independent study, including oral and written reports. Prerequisite: 8 hours of literature or consent of the instructor.

281. MONUMENTS AND INSTITUTIONS OF ROME. 4 HOURS. Same as Classics 281. Political and social institutions of Rome as they relate to the major monuments during the first two centuries of the empire.

282. ROMAN RELIGION. 4 HOURS. Same as Classics 282 and Religious Studies 282. Beliefs, practices, and institutions of Roman religions and cults from the early republic to AD 476. Prerequisite: Junior standing or consent of the instructor.

288. THE INTELLECTUAL REVOLUTION OF THE SEVENTEENTH AND EIGHTEENTH CENTURIES AS VIEWED THROUGH THE ARTS. 4 HOURS. Same as History of Architecture and Art 288 and Music 288. Evidence in the visual arts and in music of the impact of the new cosmology on men's minds, imaginations, and emotions. Prerequisite: Sophomore standing.

289. NEW PERCEPTIONS IN VISUAL ARTS, MUSIC, AND SCIENCE. 4 HOURS. Same as Music 289. The extended sensory range of the twentieth century as represented in the visual arts, music, and science. Prerequisite: Sophomore standing.

319. *DON QUIJOTE.* 4 HOURS. Same as Spanish 319. Reading and discussion; emphasis on novelistic technique and development of the novel. Prerequisite: Junior standing.

Japanese (Jpn)

101. ELEMENTARY JAPANESE I. 4 HOURS. Four additional half hours per week in the language laboratory. Reading, grammar, and oral practice.

102. ELEMENTARY JAPANESE II. 4 HOURS. Four addiitonal half hours per week in the language laboratory. Reading, grammar, oral practice, and writing of the two syllabaries. Prerequisite: Jpn 101 or the equivalent.

103. ELEMENTARY JAPANESE III. 4 HOURS. Four additional half hours per week in the language laboratory. Reading, grammar, oral practice, and the writing of some one hundred characters. Prerequisite: Jpn 102 or the equivalent.

104. INTERMEDIATE JAPANESE I. 4 HOURS. Four additional half hours per week in the language laboratory. Training in listening-speaking and reading-writing, with emphasis on the latter. Prerequisite: Jpn 103 or the equivalent.

105. INTERMEDIATE JAPANESE II. 4 HOURS. Continues Japanese 104. Emphasis on reading and writing. Prerequisite: Jpn 104 or the equivalent.

106. INTERMEDIATE JAPANESE III. 4 HOURS. Continues Japanese 105. Prerequisite: Jpn 105 or the equivalent.

Language Laboratory (Langl)

For students taking foreign language courses that suggest the use of the language laboratory. Intensive oral-aural practice. Two to six half hours per week are recommended.

Liberal Arts and Sciences (LAS)

299. LIBERAL ARTS AND SCIENCES STUDY ABROAD. 0 TO 16 HOURS. May be repeated for a maximum of 48 hours per academic year or for a total of 64 hours, all of which must be earned within one calendar year. Final determination of appropriate credit is made on the student's completion of the work. Provides credit for foreign study. The student's proposal for study abroad must have prior approval of the major department and the College of Liberal Arts and Sciences office. Prerequisite: Permission of the students's major department and the college office.

Literature in Translation. See Humanities.

Lithuanian (Lith)

101. ELEMENTARY LITHUANIAN I. 4 HOURS. Four class meetings per week and additional language laboratory experience. Introduction to phonology, morphological patterns, fundamental syntax, and functional vocabulary of modern Lithuanian.

102. ELEMENTARY LITHUANIAN II. 4 HOURS. Four additional half hours per wek in the language laboratory. Continues Lithuanian 101. Prerequisite: Lith 101 or the equivalent.

103. ELEMENTARY LITHUANIAN III. 4 HOURS. Four additional half hours per week in the language laboratory. Continues Lithuanian 102. Prerequisite: Lith 102 or the equivalent.

104. INTERMEDIATE LITHUANIAN I. 4 HOURS. Intensive review of grammar; additional syntactic structures; oral readings and translation. Prerequisite: Lith 103 or the equivalent.

105. INTERMEDIATE LITHUANIAN II. 4 HOURS. Continues Lithuanian 104. grerequisite: Lith 104 or the equivalent. Students who have not taken Lithuanian 104 at Chicago Circle must pass the Lithuanian placement test.

106. INTERMEDIATE LITHUANIAN III. 4 HOURS. Continues Lithuanian 105. Prerequisite: Lith 105 or the equivalent. Students who have not taken Lithuanian 105 at Chicago Circle must pass the Lithuanian placement test.

221. MAJOR AUTHORS OF LITHUANIAN PROSE. 4 HOURS. Reading and analysis of the works of selected writers; emphasis on contemporary authors. Prerequisite: Junior standing or consent of the instructor.

222. MAJOR LITHUANIAN POETS. 4 HOURS. Reading and analysis of the works of selected poets; emphasis on contemporary poets. Prerequisite: Junior standing or consent of the instructor.

232. LITHUANIAN DRAMA. 4 HOURS. Major dramatists of the twentieth century. Prerequisite: Junior standing or consent of the instructor.

299. INDEPENDENT STUDY. 1 TO 4 HOURS. May be repeated for credit. Investigation of special problems under the general direction of a staff member. Prerequisite: Consent of the instructor and of the head of the department.

331. HISTORY OF THE LITHUANIAN LANGUAGE. 4 HOURS. Development of Lithuanian from its Indo-European origins to the formation of the standard language; the conservative aspects of Lithuanian and its relation to Slavic. Prerequisite: 24 hours of Lithuanian or the equivalent or Ling 305.

332. STRUCTURE OF LITHUANIAN. 4 HOURS. Synchronic analysis of the structure of standard Lithuanian; reference to its historical development. Prerequisite: 24 hours of Lithuanian or the equivalent or Ling 305.

Military Science (MilsS)

BASIC COURSE—100 SERIES

100. BASIC DRILL I. 0 HOURS. Fundamentals of marching as individuals and as a team. The wear and care of uniform, customs and courtesies of the service,

and instruction in command and leadership techniques. Prerequisite: Approval of the department.

101. INTRODUCTION TO DEFENSE ESTABLISHMENT. 3 HOURS. Survey of the United States defense establishment. Emphasis on the development of military forces, evolution and cause of war, and original applications of the principles of war. Particular attention to the United States experience and the role of the army in the national security structure of the United States.

104. TOPOGRAPHIC MAP AND AERIAL PHOTOGRAPHY INTERPRETATION. 2 HOURS. Fundamentals of reading and interpretation, including marginal information, symbols, map orientation, grid reference system, and terrain analysis.

106. INTRODUCTION TO RESOURCE MANAGEMENT. 1 HOUR. The management of resources, with emphasis on personnel. Command control, span of control, and problem-solving techniques.

107. INTRODUCTION TO AMERICAN MILITARY HISTORY. 3 HOURS. Analytical study of American military history from its origin through the Vietnam conflict. Emphasis on leadership, strategy, the principles of war, and growth of the military in the United States.

125. BASIC DRILL II. 0 HOURS. Fundamentals of marching with arms. Squad and platoon formations and duties of key personnel. Prerequisite: Approval of the department.

135. BASIC DRILL III. 0 HOURS. Principles of movement of larger units, such as companies and battalions. Duties of key personnel, ceremonies, such as honors and reviews. Prerequisite: Approval of the department.

145. MARKSMANSHIP. 0 HOURS. Principles of competitive marksmanship using .22 target rifles. Prerequisite: Approval of the department.

155. PROBLEMS OF COMMAND. 0 HOURS. Role-playing of typical problems encountered by the junior leader, including personnel, morale, legal, health, marital, drugs, and alcohol problems. Prerequisite: Approval of the department.

165. ORIENTEERING. 0 HOURS. The sport of orienteering according to Olympic rules. One-day trip to an army training area. Prerequisite: Approval of the department.

175. DEVELOPMENT OF LEADERSHIP SKILLS. 0 HOURS. May be repeated with the approval of the department. Selected activities, including, but not limited to, recondo, drill, team, rifle team participation, orienteering, marksmanship training, and participation on the cadet battalion staff. Other activities are determined by the instructor. Prerequisite: Consent of the instructor.

ADVANCED COURSE—200 SERIES

200. INTERMEDIATE DRILL. 0 HOURS. Students prepare lesson plans for and instruct Military Science 100, 125, or 135. Prerequisite: Approval of the department.

201. METHODS OF INSTRUCTION. 2 HOURS. Analysis of the techniques used in planning, presenting, and evaluating instructions; lesson plans, use of training aids, role of testing, and oral presentation techniques. For the practical application phase of this course, students present two periods of instruction for videotape playback. Prerequisite: Approval of the department.

202. THE OFFICER PERSONNEL MANAGEMENT SYSTEM. 1 HOUR. Comprehensive review of the army's officer management system; emphasis on basic entry specialities in which newly commissioned officrs receive initial professional development. Prerequisite: Approval of the department.

203. THEORY AND DYNAMICS OF LEADERSHIP. 2 HOURS. Responsibilities and techniques of leadership; case studies in the psychological, physiological, and sociological factors that affect human behavior; special emphasis on counseling techniques and contemporary theoretical approaches to leadership. Role-playing procedures are used in the discussion of common problems that leaders face today. Prerequisite: Approval of the department.

204. RESOURCES MANAGEMENT. 2 HOURS. The allocation of resources and management functions in small organizations. Particular emphasis on the problem-solving process, communication media, and the estimate of the situation. Practical exercises. Prerequisite: Approval of the department.

205. ADVANCED RESOURCES MANAGEMENT. 2 HOURS. The allocation of resources and management functions in larger organizations. Particular emphasis on management of men and other resources, command and control techniques, task organization, and written directives. Practical exercises. Prerequisite: Approval of the department.

206. SEMINAR ON INTERNATIONAL EVENTS AND MILITARY IMPLICATIONS. 2 HOURS. Contemporary international events and their impact on American foreign relations and defense posture. The nature of international relations; the elements of national power of the United States and that of individual nations or groups of nations in terms of geography, economy, politics, sociology, and military factors. Prerequisite: Approval of the department.

207. ORGANIZATION AND DECISION THEORY. 2 HOURS. The nature of command and staff organization. Particular emphasis on the principles of organization; the planning and decision-making process; span and control and its application; logistics management, senior-subordinate relationships, leadership behavior and organizational effectiveness. Guest speakers. Six-hour staff exercise. Prerequisite: Approval of the department.

208. MILITARY LAW: PHILOSOPHY AND STRUCTURE OF THE MILITARY JUSTICE SYSTEM. 1 HOUR. The fundamental concepts of the Uniform Code of Military Justice and the Manual for Courts-Martial, United States, 1969 (revised edition); particular considerations include the evolution of military justice, fundamental rights of the accused, rules of evidence, search and seizure, law of land warfare, and the procedures by which judicial and nonjudicial disciplinary measures are carried out. Practical application includes a moot trial. Prerequisite: Approval of the department.

209. PROFESSIONAL SEMINAR: ADMINISTRATION AND PERSONNEL MANAGEMENT. 1 HOUR. Systems of communications flow within and between organizations. Personnel management, including strength requirements, labor relations, evaluation policies and techniques, and finance and accounting. Prerequisite: Approval of the department.

210. SYSTEMS AND TECHNIQUES OF SIGNAL COMMUNICATION. 1 HOUR. Means and principles of communications; radio authentication and security; characteristics, operation, and employment of radio equipment; discussion of the format and use of operation orders. Prerequisite: Approval of the department.

213. ORGANIZATIONAL LEADERSHIP. 3 HOURS. An academic, interdisciplinary study. Cultural, philosophical, and scientific foundations of lead-

ership viewed as a dynamic interaction involving the leader, group, and situation. Concepts from the humanities, social sciences, education, and statistics. Prerequisite: MilS 203 or consent of the instructor.

225. PATROLLING. 0 HOURS. Planning, preparing, and conducting combat and reconnaissance patrols. One-day trip to an army training area. Prerequisite: Approval of the department.

235. PHYSICAL TRAINING. 0 HOURS. Instruction and participation in the army physical training program. Prerequisite: Approval of the department.

245. ADVANCED DRILL. 0 HOURS. Command of approximately one-third of the cadet battalion; administrative and training responsibilities. Prerequisite: Approval of the department.

255. COMMAND AND STAFF RELATIONSHIPS I. 0 HOURS. Planning, organizing, commanding, coordinating, and controlling battalion and smaller units in administration, logistics, information, finance, and operations. Prerequisite: Approval of the department.

265. COMMAND AND STAFF RELATIONSHIPS II. 0 HOURS. Fundamentals of staff actions, including estimation, providing information, making recommendations, preparation of plans and orders, and supervision. Prerequisite: Approval of the department.

Natural Sciences (NatS)

101. NATURAL SCIENCES—THE PHYSICAL UNIVERSE. 4 HOURS. Same as Physics 121. Atomic theory to cosmology; physical laws and the nature of matter in the evolving universe. Prerequisite: High school algebra.

102. THE EVOLVING EARTH. 4 HOURS. May not be taken for credit by students who have credit in or are concurrently registered in Geological Sciences 101 or 102. Same as Geological Sciences 122. The first five to seven weeks introduce geological principles through examination of Chicago region geology. The remainder of the course expands one or more of these principles into a more specialized topic that is announced in the Timetable prior to each term. Two or three all-day Saturday field trips are required. Fees for field trips are $3 per student per term.

103. NATURAL SCIENCES—CHEMICAL EVOLUTION. 4 HOURS. Same as Chemistry 103. The architecture of matter: energy and the molecular basis of life and evolution.

104. NATURAL SCIENCES—LIFE EVOLVING. 4 HOURS. Same as Biological Sciences 104. Genetics, ecology, and evolution: the interaction of life and its environment—past, present, and future. Prerequisite: NatS 103 or consent of the instructor.

130. MATERIALS, TECHNOLOGY, AND SOCIETY. 4 HOURS. Modern and ancient materials and processes. Materials supply and use as political, sociological, and economic factors. Constraints in new technology. Prerequisite: High school chemistry.

Rhetoric. See English.

Rhetoric for Foreign Students. See English.

Speech for Foreign Students (SpchF)

103. SPEECH FOR FOREIGN STUDENTS. 4 HOURS. Sounds and intonation patterns of American English; relation of sound to spelling. Drill sessions designed to improve the student's ability to speak and understand English at normal conversational speed. Prerequisites: Reading knowledge of English; ability to understand instructions.

104. SPEECH FOR FOREIGN STUDENTS. 4 HOURS. English pronunciation for students whose native language is not English. Sounds and intonation patterns of American English; designed to improve the student's ability to speak at the normal conversational pace. Pronunciation material similar to that in Speech for Foreign Students 103 but for more advanced students. Prerequisite: SpchF 103 or consent of the instructor.

Student Counseling Service (SCS)

101. READING IMPROVEMENT. NO CREDIT. For students who wish to increase their reading rate or improve their vocabulary and comprehension skills.

102. STUDY SKILLS IMPROVEMENT. NO CREDIT. For students who need to develop more effective study methods. Through discussion and group interaction, students are helped to clarify their purposes and goals and to improve concentration and study skills.

103. VOCABULARY DEVELOPMENT. NO CREDIT. For students who need assistance in developing language skills. Use of vocabulary in thinking and communication. Practical exercises in vocabulary building.

104. CAREER PLANNING. NO CREDIT. For students who wish to clarify their vocational goals. Self-evaluation of abilities, interests, and personal needs as they bear on occupational choice.

105. GROUP DYNAMICS. NO CREDIT. Group sessions for students who wish to develop greater awareness of themselves and their relationships with others and to become sensitive to nonverbal forms of communication. Groups oriented toward specific topics, such as leadership training, are offered if a sufficient number of students express interest.

180. READING AND STUDY SKILLS IMPROVEMENT. 0 TO 5 HOURS. May be repeated. Does not carry credit toward graduation. Restricted to Educational Assistance Program in Urban Education, Native American Program, and Dual-Enrollment students. Improvement of reading comprehension in relation to different types of content. Prerequisite: Consent of the instructor.

Swahili (Swa)

101. ELEMENTARY SWAHILI I. 4 HOURS. Four additional half hours per week in the language laboratory. Reading, grammar, and simple oral practice.

102. ELEMENTARY SWAHILI II. 4 HOURS. Four additional half hours per week in the language laboratory. Prerequisite: Swa 101 or the equivalent.

103. ELEMENTARY SWAHILI III. 4 HOURS. Four additional half hours per week in the language laboratory. Prerequisite: Swa 102 or the equivalent.

104. INTERMEDIATE SWAHILI I. 4 HOURS. Two additional half hours per week in the language laboratory are required. Prerequisite: Swa 103.

105. INTERMEDIATE SWAHILI II. 4 HOURS. Two additional half hours per week in the language laboratory are required. Continues Swahili 104. Prerequisite: Swa 104.

106. INTERMEDIATE SWAHILI III. 4 HOURS. Two additional half hours per week in the language laboratory are required. Continues Swahili 105. Prerequisite: Swa 105.

Urban Planning and Policy (UPP)

300. ISSUES IN URBAN EDUCATION POLICY AND PLANNING. 4 HOURS. Same as Education 300. Major areas of conflict—such as race and ethnic relations, school governance, equality of opportunity, teacher bargaining, neighborhood control—that affect education in metropolitan areas. Emphasis on an understanding of the historical background and the current status of the selected issues and their implications for education policy and planning. Prerequisite: Consent of the instructor.

302. PHILOSOPHY OF EDUCATION AND URBAN SCHOOL POLICY. 4 HOURS. Same as Education 302. Systematic exploration of selected educational theories and philosophies; particular emphasis on their impact on the problems of formulating urban educational policy. Areas of special concern: serving pluralistic interests, curriculum design, school organization, and school control.

303. POLICY ISSUES IN THE HISTORY OF AMERICAN EDUCATION. 4 HOURS. Same as Education 303. Topical analysis of political, economic, and cultural influences shaping the development of American education policy; emphasis on issues of education theory and practice in their historical settings.

306. THE POLITICS OF URBAN EDUCATION. 4 HOURS. Same as Education 306 and Political Science 340. Relations between school governance and urban politics. Particular attention to the role of educational interest groups, the school board, professional educators, citizens, and civic leaders in the formulation and execution of educational policy. Prerequisite: Consent of the instructor.

307. ALTERNATIVE EDUCATIONAL SYSTEMS. 4 HOURS. Same as Education 307. Selected systems within and outside the public school system. Emphasis on origins, nature, and potential eventualities, including impact on the public schools. Prerequisite: Consent of the instructor.

351. MEDICAL SOCIOLOGY. 4 HOURS. Same as Sociology 351. Sociological contributions to medicine and public health; social organization and the organization of health services; the sociology of illness. Prerequisites: Soc 201 and 202 or consent of the instructor.

361. BIOMETRICS IN PUBLIC HEALTH I. 3 HOURS. Same as HB 300 (School of Public Health). Nature, scope, and terminology of biostatistics; appropriate uses and common misuses of health statistics; the application of selected statistical procedures. Theoretical aspects are held to a minimum; applicability of course content is relative to current health problems and programs. Prerequisite: Consent of the instructor.

362. PRINCIPLES OF EPIDEMIOLOGY. 3 HOURS. Same as HA 300 (School of Public Health). Introduction to the analysis of the distribution of infectious and noninfectious diseases; the determinants of health and disease in populations; application of the epidemiologic method to disease prevention and control. Prerequisite: credit or concurrent registration in UPP 361 or the equivalent.

363. PRINCIPLES OF ENVIRONMENTAL QUALITY. 3 HOURS. Same as HE 300 (School of Public Health). Environmental problems with emphasis on human health aspects; interactions among man, resources, and environment within the terrestrial system; trends and projections. Environmental insults within the air, water, and land environments. Legal and socioeconomic considerations. Case studies of current environmental controversies. Prerequisite: Consent of the instructor.

365. CONTEMPORARY HEALTH CARE SERVICES. 3 HOURS. Same as HC 300 (School of Public Health). Introduction to the medical care system: health professions, hospitals, health insurance, government programs, professional organizations, cost and quality control, needs, demand, supply, availability, community health systems, political trends. Prerequisite: Consent of the instructor.

366. EVALUATION AND ASSESSMENT OF HEALTH SERVICES. 3 HOURS. Same as HC 313 (School of Public Health). Development of methodology, including policy analysis, systems approach, and decision models. The logical basis for health measurement and practical aspects of planning and executing evaluation studies.

368. ECONOMICS OF HEALTH CARE. 3 HOURS. Same as HC 325 (School of Public Health). Elementary tools of microeconomics applied to current problems of resource allocation in the production of health services. Characteristics of United States health care sector; consumer demand for medical services; production and supply of health care facilities and personnel; productivity and cost measurement; restrictions on competition; health insurance proposals; cost-benefit analysis; environmental health.

373. URBAN PLANNING METHODS. 4 HOURS. The planning process and the acquisition and manipulation of related information. Planning information systems and planning model building. Familiarization with statistical package programs. Prerequisite: Consent of the instructor.

379. PLANNING RESEARCH METHODS AND DATA ANALYSIS. 4 HOURS. Basic introduction to the data sources and substantive research techniques most commonly used in planning. Issues of decision-making based on limited or imperfect information. Prerequisite: Consent of the instructor.

380. QUANTITATIVE SKILLS AND ANALYTICAL TOOLS I. 4 HOURS. Fundamental mathematical concepts, calculus, matrices, and probability. Research techniques, computer manipulation and storage of data. Estimation, regression, and correlation.

381. QUANTITATIVE SKILLS AND ANALYTICAL TOOLS II. 4 HOURS. Survey of operations research techniques with urban application. Introduction to a computer language. Urban information systems. Prerequisite: UPP 380.

382. MANAGEMENT AND ADMINISTRATIVE SKILLS I. 4 HOURS. Provides students with fundamental but sound knowledge and understanding of key administrative and managerial skills essential for urban policy makers and planners, organization behavior, and decision-making in the political environment. Prerequisite: Consent of the instructor.

383. MANAGEMENT AND ADMINISTRATIVE SKILLS II. 4 HOURS. Continues Urban Planning and Policy 382. Relation and integration of operations, systems, and accounting methods to the decision-making process. Prerequisites: UPP 382 and consent of the instructor.

384. HISTORY AND THEORY OF URBAN PLANNING AND POLICY. 4 HOURS. Study and analysis of those planning theories, policies, and methods that have evolved in response to the need for physical and human services in the urban community. Prerequisite: Consent of the instructor.

385. HISTORY AND PROBLEMS OF URBAN SOCIETY I. 4 HOURS. The evolution of cities into urban complexes; emphasis on the various city-forming forces. Special attention to the benefits and problems stemming from the process of urbanization. Prerequisite: Consent of the instructor.

386. HISTORY AND PROBLEMS OF URBAN SOCIETY II. 4 HOURS. Continues Urban Planning and Policy 385. Focus on specific as opposed to general topics. Prerequisites: UPP 385 and consent of the instructor.

387. COMMUNITY STUDIES. 4 HOURS. Study and analysis of changing models of socialization, the community in the larger context, and principles of community organization. The sociology and anthropology of diverse populations in the city and in the suburbs. Prerequisite: Consent of the instructor.

388. GEOGRAPHIC INFORMATION SYSTEMS I. 4 HOURS. Same as Geography 381. Problems encountered in the gathering and use of geographic data and the structuring of research in relation to existing relevant theory, measurement systems capabilities, and recognized objectives of research activities. Topics include review of data sources, methods of measurement, sampling models, and problems of dealing with aggregated reporting units, records matching, and missing data. Prerequisites: Geog 100, 182 (or Math 117, or Soc 185, or QM 272), one 12-hour introductory geography sequence, and one 8-hour systematic geography sequence; or Geog 385, 386, or 387; or consent of the instructor.

390. POLICY AND PROGRAM EVALUATION AND EXPERIMENTAL DESIGN. 4 HOURS. Methods used to evaluate programs; tools planners may use in evaluation. The relationships between evaluation and planning. Experimental and quasi-experimental designs and their uses in policy planning and evaluation. Prerequisite: UPP 380 or consent of the instructor.

397 THE DYNAMICS OF PLANNED CHANGE IN PUBLIC PROGRAMS. 4 HOURS. The legislation, lobbying forces, public pressures, and administrative

and political controls that influence the operations of government planning and service agencies. A case-study approach is used. Prerequisite: Consent of the instructor.

399. INDEPENDENT STUDY IN URBAN PLANNING. 2 TO 4 HOURS. Reading, study, research, and field work under the supervision of a faculty member. A written report with an annotated bibliography is required. Prerequisite: Approval of the Master of Urban Planning and Policy program director.

Urban Sciences (US)

298. SELECTED TOPICS: PLANNING AND THE URBAN COMMUNITY. 4 HOURS. Various issues in urban planning, such as social service delivery, housing, urban redevelopment, and land use.

299. INDEPENDENT RESEARCH. 1 TO 5 HOURS. May be repeated for credit. Projects consisting of extensive readings, research, and problem-solving in comprehensive urban planning.

Women's Studies (WS)

146. WOMEN IN RUSSIAN LITERATURE. 4 HOURS. Same as Humanities 146 and Russian 146. Major works that reflect and shaped the attitudes toward, and experience of, women in Russia from earliest times to the Soviet period. Knowledge of Russian is not required.

151. THE AMERICAN WOMAN TODAY. 4 HOURS. A multidisciplinary examination incorporating the perspectives of psychology, sociology, economics, and philosophy. Films, panel discussions, guest lecturers, and small discussion groups.

152. WOMEN IN HISTORY, LITERATURE, AND ART. 4 HOURS. Introductory survey of the role of women in history, literature, the fine arts, and film. Panel discussions, guest lecturers, films, and small discussion groups.

153. WOMEN IN OTHER CULTURES. 4 HOURS. A multidisciplinary examination of sex roles in many cultures, including biological, anthropological, and sociological approaches. Panel discussions, guest lecturers, films, and small discussion groups.

205. PHILOSOPHICAL ISSUES OF CONTEMPORARY FEMINISM. 4 HOURS. Same as Philosophy 205. The relevance of philosophical theories, especially in the fields of ethics and political philosophy, and methods of philosophical inquiry to both the contemporary women's movement and the search on the part of both sexes for a meaningful personal identity.

275. LATIN AMERICAN WOMEN. 4 HOURS. Same as Latin American Studies 275. Latin American women in historical perspective beginning with the general role of women in Western history. Historical analysis of the role of women in different pre-Columbian societies and Mediterranean cultures; the amalgamation of both cultures in colonial Latin America. The changing role of women in nineteenth- and twentieth-century Latin America. Latin American women in the United States.

World Literature. See Humanities.

Yiddish (Ydsh)

101. ELEMENTARY YIDDISH I. 4 HOURS. Same as Judaic Studies 101. For students who have not studied Yiddish. Basic language skills: comprehension, reading, writing, and speaking.

102. ELEMENTARY YIDDISH II. 4 HOURS. Same as Judaic Studies 102. Basic language skills: comprehension, reading, writing, and speaking. Prerequisite: Ydsh 101.

103. ELEMENTARY YIDDISH III. 4 HOURS. Same as Judaic Studies 103. Basic language skills: comprehension, reading, writing, and speaking. Prerequisite: Ydsh 102.

104. INTERMEDIATE YIDDISH I. 4 HOURS. Same as Judaic Studies 104. Reading modern Yiddish authors and the Yiddish press. Syntax and composition; conversational practice. Prerequisite: Ydsh 103.

105. INTERMEDIATE YIDDISH II. 4 HOURS. Same as Judaic Studies 105. Reading modern Yiddish authors and the Yiddish press. Syntax and composition; conversational practice. Prerequisite: Ydsh 104.

106. INTERMEDIATE YIDDISH III. 4 HOURS. Same as Judaic Studies 106. Reading modern Yiddish authors, prose, poetry, and the Yiddish press. Syntax and composition; conversational practice. Prerequisite: Ydsh 105.

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